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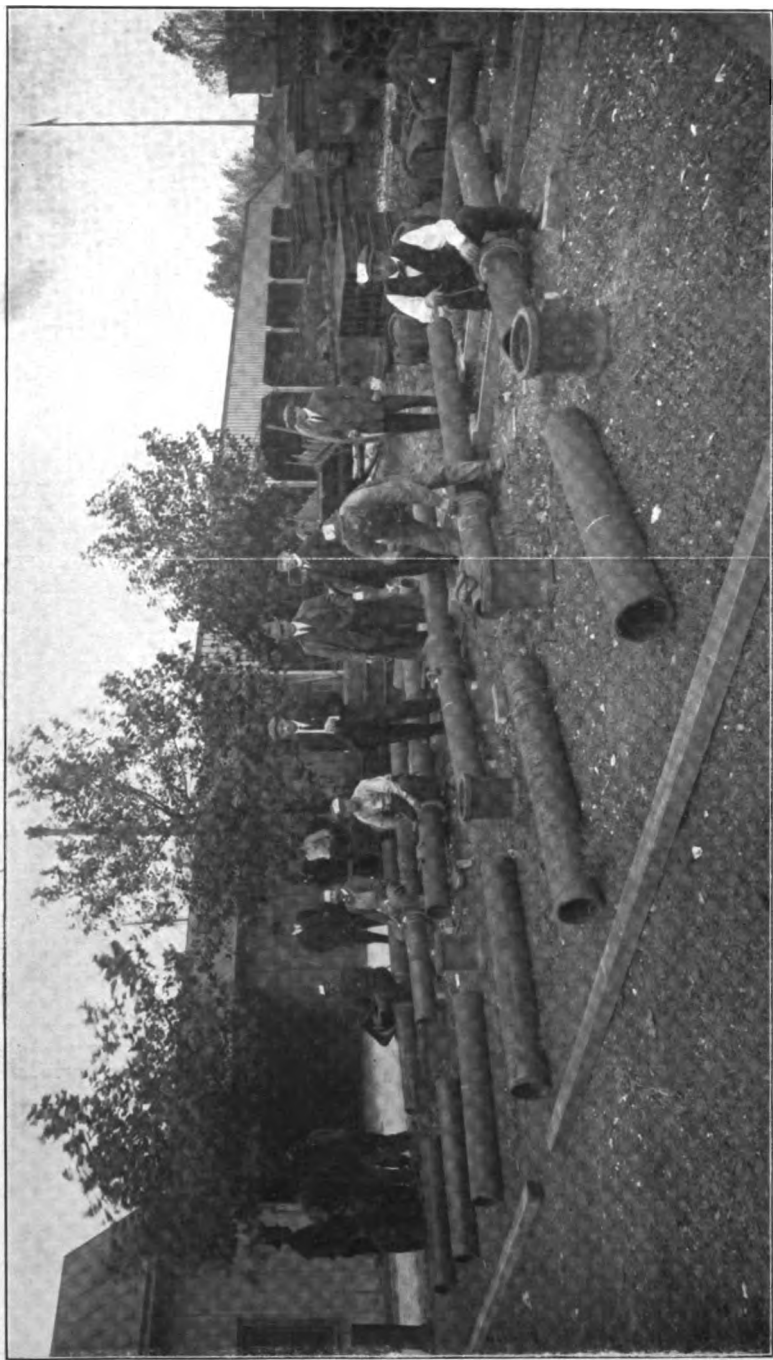
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Applicants taking examination for position of Caulker, Bureau of Water, in the Yard of the Bureau of Water, October 14, 1912.

CITY OF PHILADELPHIA

SEVENTH ANNUAL REPORT

OF THE



CIVIL SERVICE COMMISSION

TO

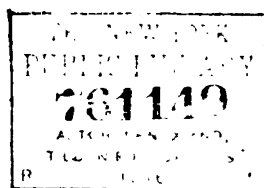
HIS HONOR, THE MAYOR

FOR THE

YEAR ENDING DECEMBER 31, 1912

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CIVIL SERVICE COMMISSION

FRANK M. RITER, President

PETER BOLGER, Secretary

LEWIS H. VAN DUSEN

Commissioners

CIVIL SERVICE COMMISSIONERS

SINCE THE FOUNDING OF THE COMMISSION

FRANK M. RITER, *President*, March 15, 1906—April 15, 1907.

CYRUS D. FOSS, JR., *Secretary*, March 15, 1906—May 3, 1907.

DALLAS SANDERS, March 15, 1906—May 27, 1907.

ALBERT G. HETHERINGTON, *President*, April 16, 1907—December 6, 1911.

WM. H. KREIDER, *Secretary*, May 6, 1907—December 6, 1911.

HENRY DRAKE, August 2, 1907—December 6, 1911.

FRANK M. RITER, *President*, December 7, 1911—

PETER BOLGER, *Secretary*, December 7, 1911—

LEWIS H. VAN DUSEN, December 7, 1911—

SEVENTH ANNUAL REPORT
OF THE
CIVIL SERVICE COMMISSION
OF THE
CITY OF PHILADELPHIA

March 8, 1913.

HON. RUDOLPH BLANKENBURG,
Mayor of the City of Philadelphia.

DEAR SIR:—The Civil Service Commission begs to submit, under separate cover, its annual report for the year 1912. In this letter it might not be improper to invite the attention of Your Honor to some of the more important features of the report of your Commission.

It is important that your attention be called to the unprecedented increase in the volume of business transacted by this Commission in 1912 over that of the previous year. You will note that the number of applications filed has increased 120½ per cent. over 1911, and that the number of persons examined has increased 200 per cent. over that of the previous year. This increase in business has a double meaning. In the first place, since the volume of business of any Civil Service Commission depends upon the purely voluntary action of applicants in filing applications and taking examinations, it feels that this marked increase in numbers denotes a tremendous growth of public confidence in the work of the Commission. In the second place, it means that a corresponding increase in the number of employees of the Commission is absolutely

necessary in order to insure prompt transaction of business, so vital to the public and particularly to the several Departments.

The Commission, so far, has received appropriations from Councils for some additional help, but no adequate provision has yet been made. The result of this is that the Commission, together with its employees, is compelled to work overtime almost every day.

Your attention is invited to the financial statement* contained in the first part of the report, which explains in detail how every dollar appropriated to the Commission has been expended. In this connection, the Commission is pleased to call your attention to the great physical changes in its offices and examination rooms for the comfort of the applicants, employees and the public generally. Your special notice is called to the large body of citizens enumerated early in the report who, in almost all cases, have served the City gratuitously as special examiners in conducting examinations requiring special skill. These citizens have performed a patriotic service. Their names bear witness to the high character of the examinations. The Commission feels that it can safely say that its examination questions, which are included in full in this report, cannot be excelled in the United States in their reasonable, appropriate and practical character.

For the first time in the history of the Merit System in Philadelphia, skilled laborers were given an opportunity to demonstrate their ability to perform the actual work involved in the position sought instead of written examinations, as a means of determining their relative fitness for appointment.

Your Commission instituted real examinations for provisional appointments. The salutary effect has been a very

*See pages 37-38.

marked change for the better in the character of the persons nominated for such appointment, and by frequent holding of examinations the tenure of provisional appointees has been very materially reduced.

The status of the Labor Class merits your earnest consideration. The Commission can never handle this properly until an appropriation is made for an Examiner in Charge of Labor and additional rooms are provided for examination and registration of such applicants. At present the Commission is compelled to borrow already crowded rooms from the Department of Public Safety, not only to examine laborers, but also to conduct physical and medical examinations of patrolmen and hosemen.

It is with considerable satisfaction that the Commission invites the attention of Your Honor to the fact that all positions formerly in the Non-Competitive Class were by your Commission placed in the Competitive Class, and that during the year 1912 only twenty-six appointments were made under the non-competitive scheme. (See page 152.)

While the Commission does not seek litigation unnecessarily, it begs to call Your Honor's attention to the fact that in whatever litigation it has been concerned it has been uniformly sustained by the Courts, so far as cases have yet been decided.

Probably the two principal criticisms leveled at the Merit System of Civil Service are that none but the highly educated are capable of passing the examinations given, and that young, inexperienced men just out of school have far greater advantages than older men of wider experience. The Commission, therefore, for the first time in the history of the Philadelphia Civil Service, has included in its report the actual facts with reference to these two matters and invites the attention of Your Honor to the statistical tables, showing the character of the education and the average age of those passing and of those failing.

The Commission regrets that it has been somewhat delayed in presenting its report, and begs to say that this delay has been occasioned by its effort to include in the report much more information than was at first contemplated.

Very truly yours,

PETER BOLGER,
Secretary

HON. RUDOLPH BLANKENBURG,
Mayor of the City of Philadelphia.

SIR:—We have the honor herewith to submit to you the Seventh Annual Report of the Civil Service Commission for the year 1912. As the present Commission's tenure of office began on December 6, 1911, this report covers in reality the first year of its work.

The quality and general scope of the work of the Commission for 1912 may be gathered from the following list of noticeable features:

The selection of special examiners and experts of the highest attainments in their various occupations to conduct examinations for positions involving the duties of their respective callings.

Reorganization of force and quarters.

Reorganization of the Examining Division.

Reduction of the number of provisional appointments by more frequent schedules of examinations and better classification of positions.

Raising the standard of provisional examinations to make them approximate later competitive examinations.

Placing in the Competitive Class positions heretofore in the Non-Competitive Class.

New rules concerning competitive promotions.

Enforcing of adequate physical examination for members of Police and Fire Bureaus.

Advancement toward the reorganization and registration of the Labor Class.

Extension of the jurisdiction of the Commission.

Prescribing, with the approval of His Honor the Mayor, of adequate and comprehensive rules by the Commission with the assistance of Civil Service experts.

Special Examiners and Experts.

From time to time the Commission has deemed it advisable to secure the help of men of the highest attainments for the preparation and grading of certain examinations involving special experience in their particular lines of work. The Commission desires, at the outset of this report, to express its appreciation of the patriotic and efficient help of the ladies and gentlemen whose names appear on pages 39-44 of this report, and who, as Special Examiners, have cheerfully assisted the Commission in its constant effort to secure the highest type of eligibles for the various vacancies in the service of the City. A large part of the success of the examinations is due to their efficient services, which, in most cases, have been given to the City without charge.

Reorganization of Force and Quarters.

Although City Councils in the spring of 1912 granted the Commission some additional employes, yet this has proved inadequate to meet the increase in the business of this office.

Such increase is partially shown by the figures in the following table:

	1911	1912	Percentage of increase of business
Applications filed	8,339	18,389	120½%
Persons examined	3,865	11,584	200 %
Appointments made	2,551	4,558	77½%

The above statistics, however, do not entirely represent the increased business of the Commission, as no complete data can be given of the number of persons who called at

its offices on official business, because no complete record of this kind was kept prior to July 1, 1912. A record has been kept for the last six months of the year, showing that 25,352 persons called at this office from July 1 to December 31, 1912, averaging 4,225 per month, almost 200 for each business day.

An hour has been added to the time of keeping the office open to the public on each working day, except Saturday, thus making the closing hour 4 P. M. instead of 3 P. M., and the entire office force has remained on duty until 5 P. M. For some of the Commissioners, examiners, clerks and stenographers, overtime work until 6.30 P. M. or later has been a frequent experience. These conditions necessitated the Commission's efforts to procure a further increase of the number of employes for the purpose of properly transacting the public business.

The arrangement of the quarters of the Commission has been changed to provide for greater comfort to the applicants and public in general, and to expedite the work of the office. How important such improvements are is readily seen when the remarkably large increase in the volume of business over the previous year is borne in mind.

The rooms in which the examinations are held have been painted and furnished with new individual tables and chairs, in order to give the applicant a more cheerful and comfortable place in which to take the tests.

The offices of the examiners have also been rearranged and partially refurnished, with a filing system and some modern office devices to facilitate the preparation and grading and recording of the examinations.

More space is needed for the two new divisions established this year. First, for the Medical Examiner and Assistant Medical Examiner, who make detailed physical

examinations of all applicants for Patrolman and Hoseman and are to make physical examinations of all applicants for the Department of Public Safety, in the offices of the Police Surgeon, but this arrangement has hampered the work of the examiners.

Second, room is also needed for the thorough and expeditious establishment and handling of the Labor Division, which will require more floor space than is at present available in the rooms allotted to the Commission.

Reorganization of the Examining Division.

The Examining Division has been reorganized by the appointment of a Chief Examiner experienced in Civil Service work, and the appointment of four instead of two Assistant Examiners.

When early in the year it was decided to hold a competitive examination for Chief Examiner, the Commission, in its desire to secure the best possible appointee, decided to waive the residential restriction and open the examination to all citizens of the United States, in the hope of securing a trained expert. This hope has been realized, for the first name on the eligible list was that of Mr. Arthur M. Swanson, formerly Chief Civil Service Examiner for Kansas City, Mo. His appointment has more than justified the open examination. Many of the needed reforms have been suggested and carried out by Mr. Swanson, whose work is constantly raising the standard of our Civil Service in scope, quality and efficiency.

Despite the thorough publicity given to the first examination for Assistant Examiner, only five eligibles were obtained on the eligible list, probably because it was limited to residents of Philadelphia. Three of the eligibles became regular assistants, and the others were employed temporarily. Very soon one of these new Assistant Examiners resigned on account of an offer of

pay higher than the \$1,800 a year allowed to the Commission for this position. Later this loss of a capable examiner was followed by a tendering of the resignation of another of the new Assistant Examiners for the same reason that had caused the other resignation, but in this second case the examiner was induced to defer the time of his resignation's taking effect until the Commission should obtain a new eligible list.

In consequence of this experience, the Commission decided to open the second examination for Assistant Examiners to all residents of Pennsylvania. It was the Commission's belief that this would attract, among other competitors, a number who were engaged in or near Philadelphia in their work, but resided beyond the City line. Twenty-five applicants took this examination.

The great increase in the number of applicants for examination has compelled the Commission to secure the assistance of extra examiners from time to time, in order that the public service might not be crippled by too long delay in examining and securing eligible lists. In its desire to follow out to the letter the spirit of Civil Service, the Commission in December held an examination for Extra Examiner open to the residents of Pennsylvania, with the hope that a list might be secured of men specially fitted to assist the regular examining force whenever such extra help might be necessary.

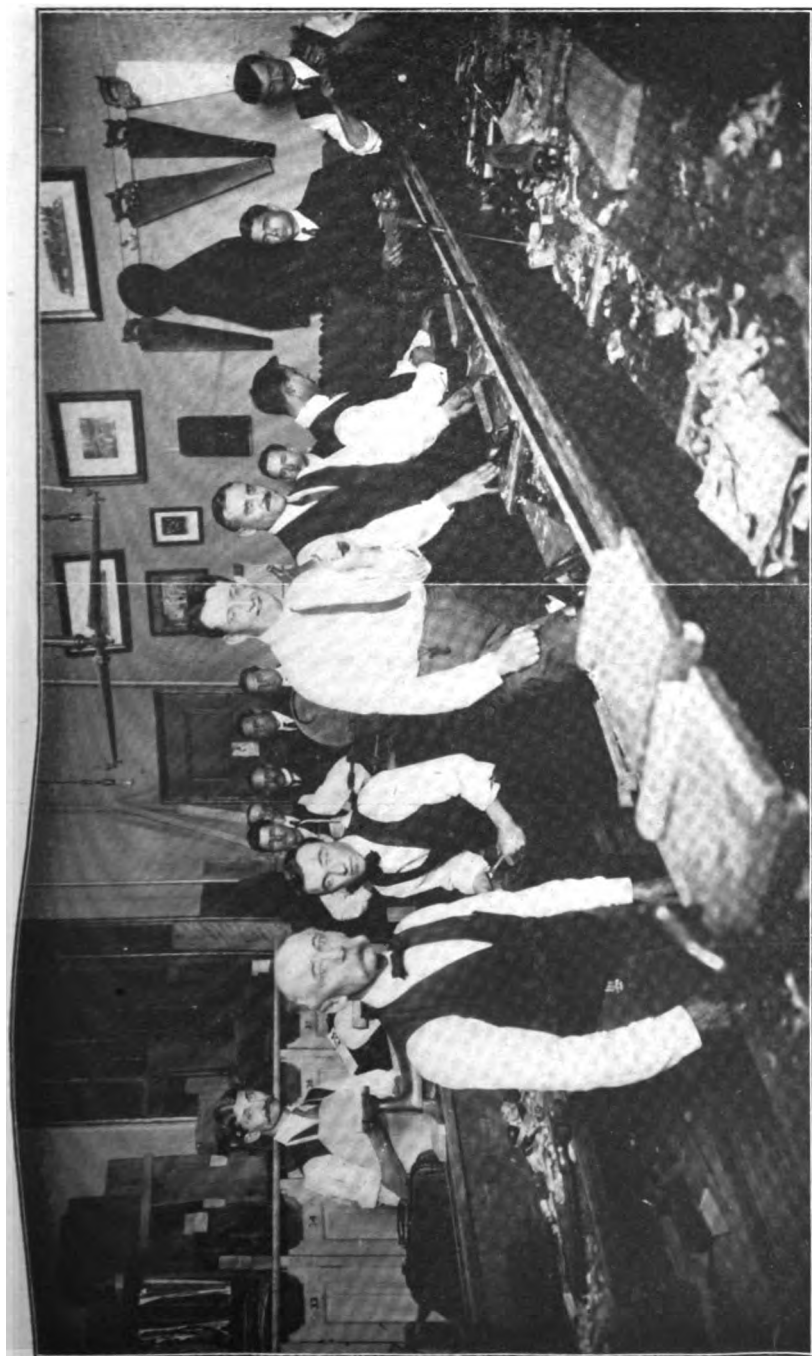
Tests Involving Actual Demonstrations of the Work

One of the chief advances made by the Commission this year has been in establishing actual tests to determine the efficiency of skilled laborers and others in whom manual dexterity as well as mental training is indispensable. For instance, applicants for the positions of Caulker, Paver and Rammer were required to do the actual work of those positions under the direction of per-

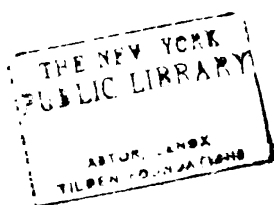
sons whose vocation was that of planning, inspecting and approving such operations, and who co-operated with the regular examiners of the Commission in determining the relative ratings of the applicants. This work was done in yards courteously designated by the Department of Public Works for the use of the Commission. In like manner, and under similar expert and practical directions, applicants for the positions of Carpenter, Patternmaker, Plumber and Printer were examined in the shops of the Philadelphia Trades School, by being required to perform the very work which they would have to do if employed by the City. Persons who desired places on eligible lists for Cook and Baker were tested in actual cooking and baking in the kitchen of the Philadelphia General Hospital. Applicants whose aim was to serve in some of the City's institutions as Tailor had the opportunity to demonstrate their skill in real tailoring to competent examiners. In like manner the work of Draftsman and Tracer, and that of the Board of Recreation positions, including Principal, Teacher, Assistant Teacher and Swimming Teacher, was actually done as the means of determining the relative merits of the applicants for those positions.

Provisional Appointments.

In order to reduce as far as possible the number of provisional appointments, the Commission has endeavored to simplify and systematize the titles of the various positions and to urge upon the Departments to make requisitions for general positions, and not for a special position which is more apt to require a provisional appointment. For instance, in the case of "Clerk," the Commission has tried to abolish the various titles of positions, such as Miscellaneous Clerk, Record Clerk, Requisition Clerk and Extra Clerk, in order that, whenever work of this kind is to be done and requires the appointment of an eligible, that



Applicants taking examination for position of Patternmaker. Held at the Philadelphia Trades School, October 28, 1912.



eligible may be taken from the general list of eligibles called "Clerks," of certain definite grades of salary. It has been found practical for these eligibles to readily conform to the varying requirements of their new positions. This reclassification is being extended to all the services as rapidly as possible.

Another method adopted to reduce the necessity for provisional appointment has been the holding of examinations more frequently. Indeed, it is planned that each month a set of examinations be held for positions for which eligibles will probably be required in the near future, and it is the effort of the Examining Division to examine and report on these examinations in a shorter time than that in which they have hitherto been able to do such work.

In the past the manner of conducting provisional examinations was lax; a glance at the table of provisional appointees in the appendices will show the seriousness of this evil. It has been the Commission's purpose to make these provisional examinations real tests of a candidate's ability to do the work; consequently, each provisional candidate is examined so as to test his general qualifications for the position involved.

This effort of the Commission is meeting with success, in that the character of the persons nominated for provisional appointment has improved in a considerable degree. Some of the provisional candidates have failed in their provisional examinations—a thing practically unknown previously. This is explained by improved requirements in such examinations.

The Commission cannot refrain from calling attention to the fact that a provisional appointment should not be made unless there are in fact "urgent reasons for filling a vacancy . . . until a selection and appointment

can be made after competitive examination." The Commission is in no sense antagonistic to provisional appointments in themselves, but it cannot fail to call attention to the fact that provisional appointments tend to discourage that open, free and complete competition which is so essential to induce the best persons to enter into the examination and consequently secure the best material for the City's service. The integrity of the system is maintained by securing an unrestricted competition, but when it happens, as it has in the past, that provisional appointees have failed to secure a place sufficiently high upon the eligible list to allow of their permanent appointment, they have been, of course, subjected to the humiliation incident to an ill-advised provisional appointment.

The Commission, therefore, feels constrained at this time to put itself on record in stating that, in its opinion, any provisional appointment, save in the case of a real necessity, is detrimental to the best principles of Civil Service, unfair to the provisional appointee, disturbing to the orderly work of a Department, and detrimental to the best interests of the citizens at large.

To counteract this injurious effect, the Commission has made unusual exertion at all times to secure the largest number of capable applicants for positions, irrespective of whether a provisional appointment was made or not.

The Non-Competitive Class.

As stated in the Commission's report for the year 1911, "Many positions in the several Departments of the City Government were found by the present Commission to have been placed in the Non-Competitive Class under a loose interpretation of the Civil Service Act."

The Civil Service Act provides that the Non-Competitive Class shall include only such positions as are not in the Exempt Class or the Labor Class, and which it is

impracticable, in the judgment of the Commission, to include in the Competitive Class. The fundamental requirement of the Act calls upon the Commission to ascertain qualifications and fitness by competitive examinations so far as practicable. The Commission, in its endeavor to fully carry out the purpose of the Act, during the past year placed 144 positions, heretofore non-competitive, in the Competitive Class, and it is with pleasure that it now records that all positions in the City's service formerly in the Non-Competitive Class have been taken out of that class and placed in the Competitive Class, where they properly belong.

The Exempt Class.

On May 13 two positions in the Department of Wharves, Docks and Ferries, namely, Notice Server at \$900 per annum and Stenographer at \$900 per annum, were taken from the Exempt Class and placed in the Competitive Class, because the nature of their duties did not require their exemption.

On November 22 the position of Clerk and Paymaster, Bureau of Water, Department of Public Works, salary \$1,200 per annum, was taken from the Exempt Class and placed in the Competitive Class, because the nature of its work did not warrant its exemption.

On April 18, at the request of Director George W. Norris, certain positions in the Department of Wharves, Docks and Ferries, heretofore in the Exempt Class, were continued in that class for a period of one year, for the reasons appearing at length on pages 158-161 of this report.

On September 25, at the request of the Director, George D. Porter, of the Department of Public Safety, the position of Superintendent of Police was placed in the Exempt Class for the reasons set forth on page 161 of this report. On December 5, 1912, at the request of the Director of

Public Safety, the Commission revoked the exemption of the position of Stenographer and Typewriter, \$900, in that department, and placed under that exemption as provided by the Act of March 5, 1906, the position of Secretary to the Director of Public Safety.

Competitive Promotions.

In the matter of promotions, also, the Commission has instituted the competitive principle, and has not permitted any promotion examination to be held nor any certification of eligibles to be made from a promotion eligible list, in accordance with the Promotion Rule in force when it assumed office. That rule provided that "After a promotion examination, a list giving the results of the same should be sent to the appointing officer, and from it he should appoint such person or persons to the higher positions as he may desire." This practically annulled the Civil Service Act provision to have promotions governed by the competitive principle, and opened the way to discrimination and favoritism through exercise of the appointing officer's power to select an eligible from any place on the list. The present Commission's examinations and certifications of eligibles for promotion appointments were regulated strictly in accordance with the law's provision for making original appointments, requiring that the appointing officer take his choice of one person from the highest four, two persons from the highest five, three from the highest six and four from the highest seven, and that each name be certified four times.

Physical Examinations of Members of Police and Fire Bureaus.

Special attention is also called to the enforcing of adequate requirements for policemen and firemen, both moral and physical. An examination of the tables in the

appendices will show how carefully each candidate for a position in the Police or Fire Service of our City is examined as regards his strength and health. Only such as pass satisfactorily this preliminary physical examination are admitted to the regular written competitive examination.

All eligibles for Patrolman and Hoseman are also subjected to a character investigation, conducted under the supervision of our Chief Examiner. How effective this is may be realized from the fact that at the last examination for Patrolman 5 per cent. of the eligibles were declared ineligible because of their unsatisfactory character.

It is hoped that this investigation of the characters of the eligibles may gradually be extended to cover all eligible lists.

Labor Class.

It is a well-known fact that for several years appointments have been made from the Labor Class to perform clerical duties and the duties of other positions in the Competitive Class. In many cases these irregular appointments were due to the insufficient appropriation for clerical force, but in many other cases sinecures were created. This was, of course, in violation of the Civil Service law. In May the Commission wrote to the heads of Departments calling attention to its attitude on this question, and expressing its plan of rectifying this abuse without interfering with the work of the City. It was hoped thereby that the various heads of the Departments, in their budgets submitted to Councils, would ask for proper appropriations to cover the work of the positions which had been illegally filled by appointees from the Labor Class. The Commission did not desire in any way to obstruct the work of the various Departments of the

City, and it feels that its warning gave each Department sufficient time to clear itself of these illegal appointments and to secure legal appointments from the competitive lists. In one case, for instance, by agreement between the head of the Department and the Commission, the number of persons appointed as Laborers, but performing the work of positions in the Competitive Class, will be dismissed gradually in four groups—on January 7, February 1, March 1 and April 1, 1913.

As soon as the present Labor list is exhausted, the Commission plans to give a physical examination to every applicant for Labor Service and to place the names of those who pass this examination in a proper Labor Register. When a department makes a requisition for ordinary unskilled laborers, the Commission will certify to the appointing officer from its Labor Register, in the order of their standing thereon, twice the number of persons to be employed. The Commission is at present very much handicapped in putting this plan into execution because of the lack of room for the examination and the necessary room and clerical force to maintain an efficient and expeditious Labor Register, but it earnestly hopes that the coming year may see this plan in full working order.

Cases in Court.

The Commission desires to call attention to the fact that its determination to carry out the principles of the Civil Service law has unfortunately made it defendant and sometimes prosecutor in court in a number of cases of more or less importance. For instance, a man who had held a provisional appointment as Assistant Superintendent of City Hall, and who in the open competitive examination had failed to be eligible, sought to enjoin the Commission from allowing a permanent appointment because of what he considered the impracticable character

of the examination. The judge denied the preliminary injunction, and said that the questions asked were practical questions applying closely to the duties of the position. The defense was ably conducted by James Gay Gordon, Jr., Esq., Assistant City Solicitor.

Another case in which the Commission was forced to be a defendant is known as *Kemper vs. The Civil Service Commission*, C. P. No. 3, June Term, 1912, No. 2609. It involved the question of whether the City Solicitor, after having made an appointment of a stenographer in the Exempt Class as the equivalent of a confidential clerk, could also appoint a clerk as a "Confidential Clerk" under the provision of Section 12 of the Act of March 5, 1906; the office of Confidential Clerk not having been provided for by name by Ordinance of Councils.

Under the former Commission all the subordinate offices in the City Solicitor's office had been placed in the Non-Competitive and Labor Classes, and his Assistants in the Exempt Class. An application was made by the new City Solicitor for the exemption of practically his whole force from competitive examination. The matter was taken up at a public hearing by the Commission in January, and the Commission in its decision determined that it was practicable to conduct competitive examinations for the subordinate offices in the City Solicitor's office, but exempted the Assistant City Solicitors and one stenographer at \$1,500 per year, which position was considered by the Commission as being equivalent to that of a confidential clerk, such as the law allows to the Director of each executive Department, and the law was thus liberally interpreted by the Commission to include the City Solicitor among such Directors.

Later, another public hearing was held before the Commission to determine whether it had the power to consider that each appointing officer elected by the people is

entitled to two exempt positions by virtue of the Civil Service Act which grants the Mayor two such exemptions. At this hearing it was determined that the Commission did not have this power. Nevertheless, the City Solicitor attempted to make a second exempt appointment. The Commission, however, refused to certify to the City Controller such exempt appointment. As a consequence, the proposed appointee sought to mandamus the Commission to certify to the Controller that he was legally appointed. The case was argued before Judges Ferguson and Davis on November 26, 1912, but at the close of the year it had not been decided.* The Commission desires to express its sincere gratitude to Frank P. Prichard, Esq., who so loyally gave his valuable services as counsel for the Commission.

A third lawsuit (*Smith et al. vs. City of Philadelphia et al.*, C. P. No. 2, March Term, 1908, No. 2920), and one which attracted very much more public attention than the ones mentioned above, concerned about 1,250 patrolmen who had been placed on a general eligible list, which was subsequently divided into district eligible lists, from which appointments were made. In this way many eligibles were appointed from the district lists whose averages on the general list were not high enough to warrant their appointment, and many eligibles who stood high upon the general list never even had an opportunity to be appointed. On April 1, 1912, Judge Sulzberger decided that the separating of the general lists into district lists, by which eligibles with low averages on the general list got relatively higher places on the district lists, was illegal, and that those who had been appointed as patrolmen from the district lists were not patrolmen

*On January 11, 1913, the Court upheld the Commission in its ruling that an appointing officer, except the Mayor, is entitled by law to only one exempt position.

of the City of Philadelphia. The present Commission has endeavored to carry out this decision and has, therefore, not admitted to its promotion examination any person so appointed.

Another lawsuit (Commonwealth *ex rel.* William J. Fleming *vs.* City of Philadelphia Civil Service Commission, C. P. No. 2, December Term, 1911, No. 5461), was decided in favor of the Commission, which was thus upheld in suspending work upon the examinations that had been held by the preceding Commission for patrolmen, mounted patrolmen and hosemen. The present Commission, having raised the standard of physical requirements for these positions, decided not to prepare eligible lists from these examinations, and in its decision was sustained by the court. The Commission gave to all persons who had taken these examinations the opportunity, if they successfully met the new physical requirements, to enter, without filing new applications, the new examination for the positions for which they had applied. About two-thirds of the candidates availed themselves of this opportunity. In this case also Assistant City Solicitor James Gay Gordon, Jr., successfully defended the Commission.

Some Petitions for Reinstatement.

The Commission refused petitions for reinstatement of a number of discharged employees. A paver and a highway inspector who had been discharged by the previous City Administration were, however, reinstated through hearings which the Commission held. In the cases of two employees whose discharges did not show that sufficiently specific reasons had been assigned by the appointing officer for removing them, the Commission caused them to be restored to their positions until that officer complied with the requirements for specifying particulars of the ground for the discharges.

Among applications for reinstatement which the Commission heard was one for the reinstatement of an officer of the Bureau of Police, who was discharged in the year 1910 in consequence of the finding of a police court of trial. A hearing of the case took place in March, 1912. The Commission was of the opinion that the original dismissal was justified, and that the conditions of good administration did not require the reinstatement to be made, and further called attention to the rule providing that a condition necessary for reinstatement was that "the separation must have occurred within one year next preceding the date of the receipt by the Commission of the requisition of the head of the department or office for such certification." The request for reinstatement was not received by the Commission until July 18, 1912, nearly two years after the "separation" in question. The Commission announced that this rule alone would have prevented a granting of the petition, if there was no other reason for the refusal to approve the proposed reinstatement.

In the case of one application for reinstatement, the cause of the discharge was officially stated to have been violation of the "Shern Law" by political activity at an election. The Commission declined to interfere unless there should be an offer of proof that the discharge was made for such reasons, political or religious, as are declared by the Civil Service Act to be grounds upon which no person shall be discharged. In behalf of the discharged man it was proposed to prove that not political activity, but his political belief, inclinations or affiliations, were the real reasons for his discharge. The evidence failed to convince the Commission that his allegation was well founded, and the petition for reinstatement was refused.

Refusal to Certify as Eligible.

In obedience to the mandate of Section 10 of the Act, the Commission has refused to certify as eligible the names of a number of applicants who had passed the examination for Patrolman and Hoseman but whose characters upon investigation were found to be unsatisfactory. In the case of a few other lists the Commission refused to certify as eligible certain ones who had passed the examination, but had made in their applications mis-statements of material facts. The policy of the Commission is not to take this drastic action until after the applicant in question has had opportunity to be heard.

Attempts to Coerce Eligibles to Decline Appointment.

In some of the public hearings which have been held frequently by the Commission, in order to fulfill completely its duty not only to the City but to the individual citizens, in its effort to give the City the most efficient employes and to insure to each eligible his legal opportunity for service, an unfortunate condition was revealed. It was discovered that in some instances, particularly where the provisional appointee did not appear among the first four persons certified by the Commission, pressure had been brought to bear upon some of the first four to get them to decline appointment. Thus the way was opened for certifying the fifth, sixth or seventh name on the list until the desired eligible name was reached. If the eligible list was short, such practice of course would soon exhaust it, and then a provisional appointment could be made. In order to prevent such abuses, the Commission believes that the certification of four names should be sufficient for each requisition, unless the entire four were taken out of consideration by death, sickness, removal from the City or other legitimate cause.

Residence Qualifications.

Five (5) of the twelve hundred and fifty-seven (1,257) appointments made during the year 1912 (a trifle more than $\frac{4}{10}$ of 1 per cent. of said appointments) involved action by the Commission under Section 5 of Rule III of the Civil Service Rules of the City of Philadelphia. In the case of these five appointments, either because of the technical or professional character of the position to be filled, or because of the difficulty of securing applicants who were residents of the City of Philadelphia, the Commission waived the requirement that the applicant should be a resident of this City.

The action of the Commission in these five cases involved the filling of the positions of:

Chief of the Bureau of Highways and Street Cleaning, Department of Public Works.

Chief of the Bureau of Water, Department of Public Works.

Chief Meter Inspector (Temporary), Department of Public Works.

Chief Examiner, Civil Service Commission.

Farmer and Assistant Farmer, Department of Public Health and Charities.

The Extension of the Jurisdiction of the Civil Service Commission.

In recognition of the efficiency of the examinations conducted by it, the Commission has been asked to hold examinations for a number of positions not usually regarded as coming under Civil Service, and in all cases has complied with such requests.

Dr. Joseph S. Neff, Director of the Department of Public Health and Charities, and the Board of Public Education, requested the Commission to conduct the exam-

inations for School Medical Inspectors, which positions are under the joint jurisdiction of these two departments, but the salaries are paid by the latter. Doctor Neff also requested the Commission to take charge of the examinations for Internes.

At the time of the writing of this annual report, the right of the Fairmount Park Commission to appoint its employees without taking them from the Civil Service eligible lists is being legally tested. There are certain other agencies executing functions closely related to the City Administration, which the Commission believes ought to be brought within its jurisdiction.

In view of the fact that the Fairmount Park Commission is composed of citizens and certain officials of the City, that the park property stands in the name of the City, is paid for out of the City's money, as are the expenses of its maintenance, and that its purpose is municipal, it clearly appears to the Civil Service Commission that the Fairmount Park Commission is a part of the City Government. The letter of the Commission to the Park Commission on this subject quoted from a decision of Judge Paxon: "The park belongs to the City of Philadelphia. The title to all this magnificent domain is in the name of the City. With the exception of such portions as were generously donated, it was paid for with the money of the City. All the expenditures for its adornment and for its government and police regulations come from the City Treasury. The Park Commission has no legal entity. It has no separate corporate existence, municipal or otherwise. It can neither sue nor be sued. It does not own a dollar of money or a rood of land. For most legal purposes it is a myth, intangible and incorporeal. Yet the law has conferred upon it important and varied powers. It is a branch of the City Government, clothed with certain authority and performing prescribed duties, and, in its limited sphere,

free from the control of the other departments of the City. . . .” The letter continued: “The question as to the manner of appointment of these guards was raised very early in the administration of the City under the Bullitt Bill, and in 1887, in answer to several questions presented to him by Hon. Edwin H. Fitler, Mayor of the City, Charles F. Warwick, Esq., the then City Solicitor, replied that, in his opinion, the park guards unquestionably were subject to the Civil Service provisions of the Act of 1885, and based his conclusion upon the fact that the statutory authority for their appointment clearly indicated that they were to be appointed as the other police of the City, and that they therefore could not escape the provisions governing the appointment of the regular City police. . . . Inasmuch as the Civil Service Act provided that all officers, clerks and employes in the cities of the first class, holding office on the first day of March, 1906, shall be construed to have been appointed under the provisions of that Act (Section 27), this Commission would, under no circumstances, take any action that would affect any persons who were employees of the Park Commission on March 1, 1906. Moreover, by reason of the length of time elapsing between the approval of the Civil Service Act and the enforcement of its application to the employees of the Park Commission, the Civil Service Commission deems it inadvisable to raise any question concerning appointments made prior to its first letter to you upon this subject on May 17, 1912. . . .” In this letter the Civil Service Commission stated that the provisions of the Act of March 5, 1906, would have to be complied with in connection with appointments made to the Public Aquarium, for the reasons that examinations were held by it and eligible lists established prior to the transfer of the employees of the Aquarium from the jurisdiction of the Mayor to that of the Park Commission.

The Park Commission has so far not granted the request of the Civil Service Commission for a list of its employees and other information needed for the purpose of making a Civil Service Roster of such employees, nor has the City Controller acted in accordance with the notice of the Civil Service Commission not to approve warrants for salaries of persons appointed by the Park Commission since May 17, 1912, when the Civil Service Commission brought this matter before the Park Commission, but, acting under the advice of the City Solicitor, the Controller has continued to approve such warrants. These questions are now being settled in a suit in equity brought by R. Francis Wood, of the Civil Service Reform Association, against the City of Philadelphia, the Commissioners of Fairmount Park and the City Controller, taking as typical cases the right of the Controller to pay salaries to certain park employees.

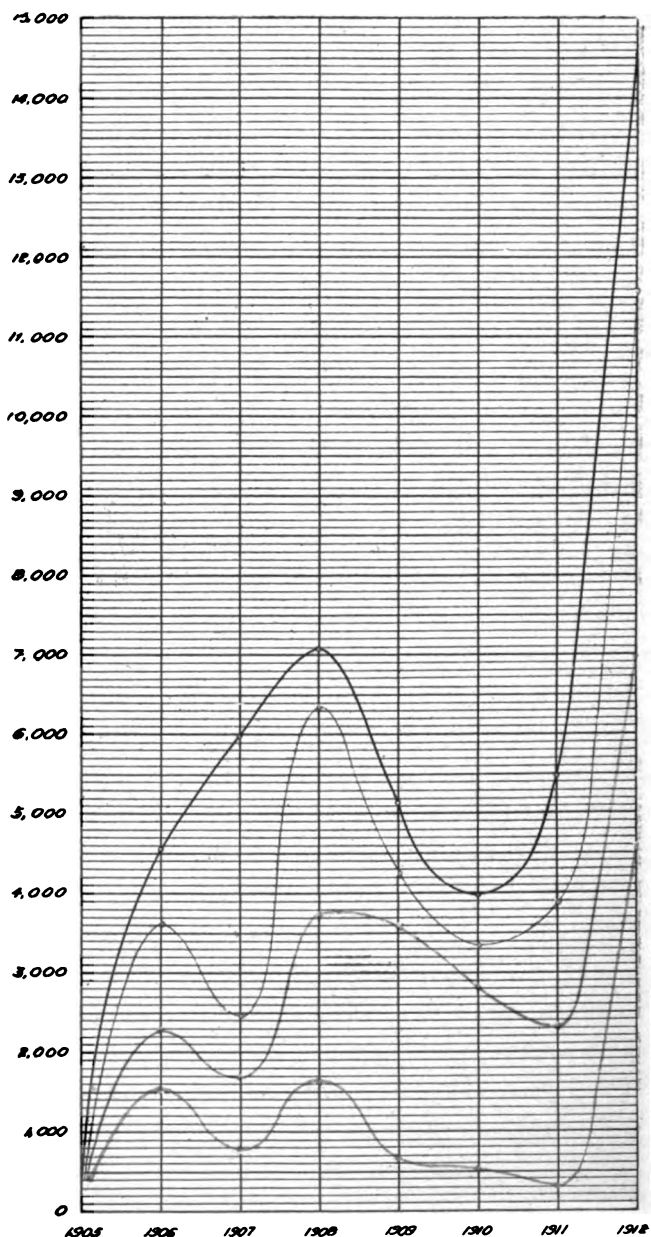
Statistics and Tables.

The Commission desires also to call attention to the following appendices of particular interest to all the citizens of Philadelphia and to the students of the municipal affairs in general. For the first time the appendices of the report include a complete financial report, and for the first time the tables showing the results of the examinations give also details about the education, age and nativity of those who took the examinations. In the table showing the individual appointees are full data concerning each appointee, showing for the first time the position of each appointee on the eligible list. In connection with provisional appointments a table has been added to show the record of the provisional appointees in later competitive examinations.

The Commission has tried to make the appendices contain the answers to all questions concerning these exam-

inations which an applicant, an officer of the City, an appointee, a student of municipal affairs or any other citizen might ask. Applicants will be especially interested not only in the rules and regulations of the Commission, which are printed in full, but also in the reprint of all the questions asked in examinations during 1912, which are here made public for the first time, with the hope of encouraging a larger number of capable applicants, by showing them what they are to expect in a competitive examination.

Detailed statistical reports of the work of the Commission during the year 1912 are hereinafter included. A brief summary of the yearly volume of business since the passage of the Civil Service Act (March 5, 1906) follows:



COMPETITIVE CLASS.

Applications Filed _____
 Number Examined _____
 Number Passed _____
 Number Failed _____

	March 5 to December 31, 1906	1907	1908	1909	1910	1911	1912
APPLICATIONS FILED:							
Competitive class -----	4,551	5,992	7,005	5,136	3,966	5,475	14,545
Labor class -----	—	—	1,729	1,608	1,361	2,746	3,844
EXAMINATIONS:							
Examinations held -----	150	11*	193	187	206	196	307
Notified to attend -----	4,806	3,209	8,332	5,308	4,450	4,080	14,033
Attended -----	3,601	2,456	6,354	4,261	3,349	3,805	11,584
Failed to attend -----	971	751	1,978	1,107	1,101	815	3,069
Placed on eligible lists -----	2,292	1,606	3,733	3,539	2,823	2,327	6,966
Failing to pass -----	1,509	760	1,619	672	521	300	4,506
APPOINTMENTS:							
Eligible lists -----	516	305	528	1,078	677	921	1,257*
Soldier exemption -----	107	497	298	—	—	—	—
Non-competitive -----	1	5	14	22	15	43	16
Totals -----	624	867	840	1,100	692	964	1,283
PROMOTIONS:							
Eligible lists -----	53	23	39	133	102	96	96
Soldier exemption -----	—	35	11	—	—	—	—
Totals -----	53	93	96	133	102	96	96
REINSTATEMENTS:							
Totals -----	27	103	47	64	67	95	43
TRANSFERS:							
Totals -----	23	13	5	124	11	55	60

*This does not include Labor Class appointments.

Recommendations.

The Commission would also make certain recommendations for the consideration of Your Honor:

First—That great encouragement would be given capable men and women to present themselves for examination if it were made the announced policy in all Departments to select the first name on the eligible list for appointment, and that the certification of four names should be sufficient for each requisition unless the entire four were taken out of consideration by death, sickness, removal from the City or other legitimate cause.

Second—That no nomination for provisional appointment be made so long as the eligible list for the position in question is not entirely exhausted. It is true that under the Act, when there are urgent reasons for such an appointment and there are less than four names remaining on the eligible list, such nomination for provisional appointment may be made, but the Commission would urge that instead at least temporary appointment be given some person on the eligible list.

Third—That the payrolls of all Departments be submitted to the Commission to be checked against its official roster of persons legally appointed before warrants are approved by the City Controller. The experience of the best municipal Civil Service Commissions has proved this to be necessary for good administration of the Civil Service Law.

Fourth—The Commission would urge upon Your Honor the great importance of insisting that Councils appropriate sufficient money for additional employees in this Department, in order that the business most vital to the several Departments—that is, the holding of examinations and the rating of papers—may not be unnecessarily delayed. With the great volume and variety of work to be

done the Commission is forced to employ extra and special examiners almost constantly, and it is of the greatest importance to the several Departments that money be provided for this purpose.

Conclusion.

In conclusion, the Commission desires to express its appreciation of the hearty support given its work by Your Honor. It would also express its appreciation of the cordial co-operation of the several Department heads and Bureau chiefs.

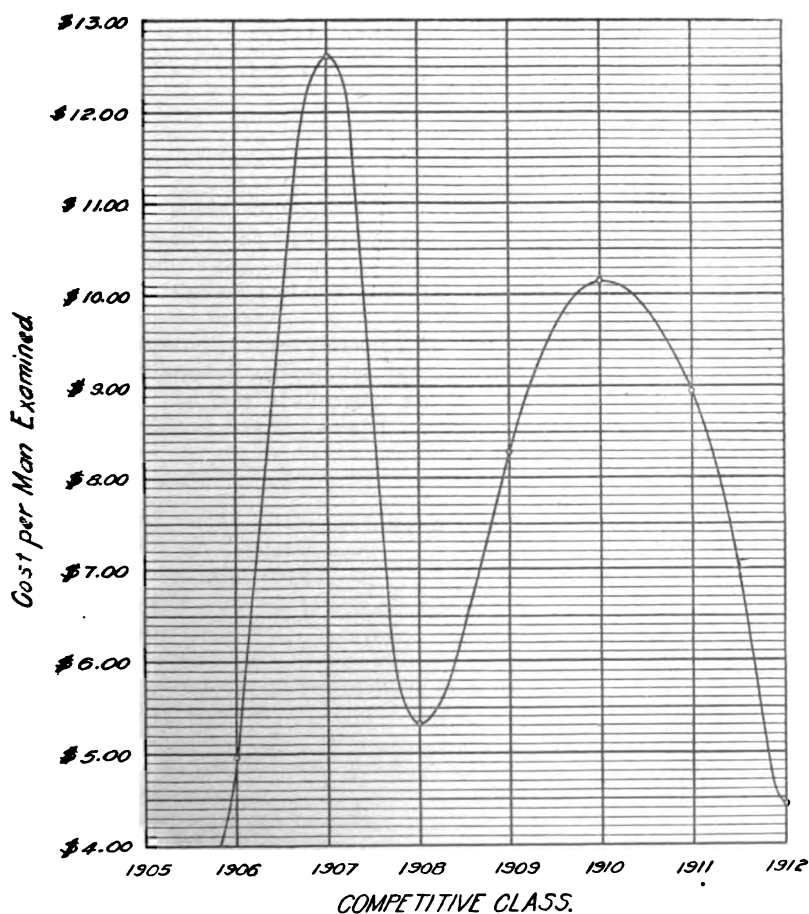
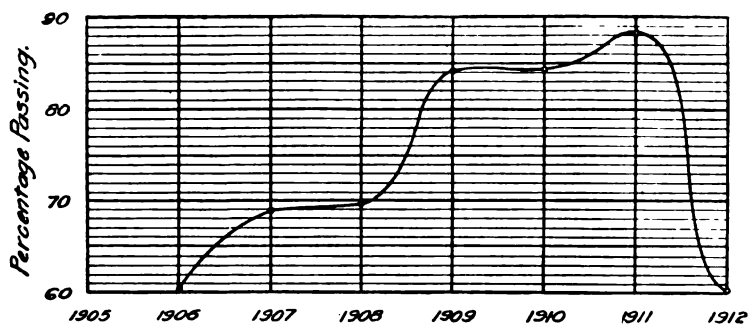
The Commission also acknowledges its appreciation of the courtesy of the Honorable Secretary of the Treasury of the United States and the Board of Public Education in granting it the use of rooms in their charge for examination purposes.

It is also proper here publicly to express the thanks of the Commission to Hon. John T. Doyle, Secretary of the United States Civil Service Commission, Washington, D. C., for his expert assistance in the preparation of the present rules. It was found that in order to insure an efficient administration of the Act an almost entirely new set of rules would be necessary, and the Commission was fortunate in having the assistance of the best informed civil service experts in the United States.

The Commission wishes to express its deep appreciation of the valuable assistance and counsel received from various citizens of Philadelphia on both general and definite questions, in addition to direct, active help in the matter of preparing and grading examinations, which has been referred to before. In particular it desires to thank T. Henry Walnut, Esq., counsel and secretary of the Civil Service Reform Association of Pennsylvania, and Robert D. Jenks, Esq., who was one of the authors of the Civil Service Act, and as former counsel of that association, was

a participant in various kinds of litigation involving provisions of that law. The services of these gentlemen, given without compensation, in the preparation of the new rules and in giving information and advice in relation to the application of the civil service principles with which they are familiar have been very valuable to the Commission and to the City.

FRANK M. RITER,
PETER BOLGER,
LEWIS H. VAN.DUSEN,
Commissioners.



APPENDIX A

FINANCIAL STATEMENT

SHOWING APPROPRIATIONS OF COUNCILS TO THE CIVIL SERVICE COMMISSION AND EXPENDITURES DURING THE CALENDAR YEAR 1912

Item.	<i>Appropriations.</i>	Dr.
1	Salaries of Commissioners	\$11,000 00
2	Salaries of regular employees	26,435 00
3	Advertising, extra clerk hire, incidentals, etc.	3,600 00
4	Equipment, including purchase of furniture, fittings and library	2,500 00
5	Special or extra examiners, etc.	4,200 00
6	Stationery and printing (appropriations made to De- partment of Supplies for the use of the Civil Service Commission)	3,598 75
	Total	\$51,333 75

	<i>Expenditures.</i>	Cr.
	Salaries of Commissioners	\$11,000 00
	Salaries of regular employees	26,284 57
	Salaries of extra clerks and examiners	4,336 14
	Special examiners	490 51
	Monitor service	54 00
	Subsistence for employees working overtime	193 00
	Traveling expenses	243 95
	Postage	1,187 48
	Telegraph, telephone and messenger service	33 31
	Printing	1,557 81
	Stationery	2,181 40
	Advertising	195 07
	Typewriting and multigraph machines	825 63

Office fittings	94 05
Furniture (including desks), examination tables, etc.	1,660 93
Repairs and alterations, etc.	92 85
Cleaning and toilet supplies	176 25
Equipment for physical examinations	108 74
Supplies for photographing applicants for positions in Bureau of Fire and Police, Department of Public Safety	170 65
Rental of typewriting machines for applicants in examina- tions	106 50
Rent of room for conducting examinations	40 00
Library	87 58
Subscriptions to periodicals	53 00
Balance of appropriations unexpended	160 33
Total	\$51,333 75

APPENDIX B

SPECIAL EXAMINERS.

The following persons have served as special examiners during the year. A large part of the success of the examinations is due to their efficient services, which, in most cases, have been given to the City without charge. The Commission acknowledges its hearty appreciation of their services.

<i>Name and Occupation.</i>	<i>Examinations Conducted.</i>
Ash, William C., Principal, Philadelphia Trades School.	Carpenter; Patternmaker; Foreman of Printers; Foreman of Plumbers.
Beeber, Hon. Dimner, President Commonwealth Trust Company.	Chief, Bureau of City Property.
Biddle, Col. Caldwell K., Attorney at Law, Colonel Third Regiment Infantry, N. G. P.	Drillmaster, Bureau of Police and Fire.
Blanchard, A. H., Professor Civil Engineering, Columbia University, New York.	Assistant Commissioner of Highways; Chief, Bureau of Highways.
Bliss, Atwood L., Civil Engineer.	Special Inspector, H. P. F. S.; Second Assistant Engineer, H. P. F. S.; Third Assistant Engineer, H. P. F. S.; Inspector of Steel; Assistant Inspector Concrete and Masonry; Inspector of Construction Work; Draftsman, \$950; Transitman; Rodman; Caulker.
Brumbaugh, Dr. M. G., Superintendent of Public Schools of Philadelphia.	Secretary of Committee on Comprehensive Plans.
Burks, Jesse D., Director, Bureau of Municipal Research.	Registrar, Bureau of Water.
Castor, Louis A., Bureau of Animal Industry, Post Office Building.	Veterinary Surgeon; Assistant Meat and Cattle Inspector.

<i>Name and Occupation.</i>	<i>Examinations Conducted.</i>
Clark, Edwin, Chief, Bureau of Building Inspection.	Chief Draftsman.
Daly, T. M., President, Continental Equitable Title and Trust Company.	Chief Clerk, Bureau of Highways and Street Cleaning.
Datesman, George E., Principal Assistant Engineer, Survey Bureau.	Special Inspector, H. P. F. S.; Third Assistant Engineer, H. P. F. S.; Inspector of Steel; Draftsman, \$1,000; Draftsman, \$900; Rodman; Transitman; Draftsman, \$950; Inspector of Highways.
Deeter, Jane Parker, Superintendent of Agents, Society Prevention of Cruelty to Children.	Special Agent, Department of Health and Charities; Matron, Department of Law.
Devereux, Washington, Chief Inspector, Philadelphia Fire Underwriters.	Manager Electrical Bureau.
Dillon, Patrick, Foreman of Paving.	Paver; Rammer.
Dodge, J. M., Chairman, Board of Directors, Link Belt Company.	Registrar, Bureau of Water.
Dodge, Kern, Engineer. ¹	Electrician; Inspector of Street Cleaning.
Doyle, John T., Secretary United States Civil Service Commission.	Chief Clerk and Office Manager, Civil Service Commission.
Driver, W. R., Jr., Bell Telephone Company.	Operator, Electrical Bureau.
Edgerton, Charles R., President, Coatesville Boiler Works.	Assistant Chief, Bureau of Highways and Street Cleaning; Assistant Engineer, Sewage Disposal.
Edmonds, Franklin S., Attorney at Law.	Cashier, Department of Law.
Ehle, Archibald, Manager, Baldwin Locomotive Works.	Third Assistant to Chief, Bureau of Water.
Fisher, Wager, Engineer.	Assistant Engineer, \$4,000; Assistant Engineer, \$3,000.

<i>Name and Occupation.</i>	<i>Examinations Conducted.</i>
Franklin, Benjamin, Engineer.	Assistant Engineer, \$4,000; Assistant Engineer, \$3,000.
Furbush, C. Lincoln, Physician.	Supervising Medical Inspector; Assistant Resident Physician, P. H. C. D.; Assistant Physician Insane Department; Assistant Medical Inspector; Outdoor Physician; Interne; School Medical Inspector.
Gaskill, J. Howard, Dentist.	Woman Attendant at Dental Clinic; Dentist.
Goodwin, Elliott H., Secretary National Civil Service Reform League.	Office Manager; Chief Examiner; Assistant Examiner.
Goshorn, H. R., Head of Claim Department, Philadelphia Rapid Transit Company.	Investigator; Special Evidence Agent.
Harnish, Ora Annie, Superintendent of Burd School.	Special Agent, Department of Health and Charities; Matron, Department of Law.
Hanson, M. F., General Manager and Treasurer, Philadelphia Record.	Chief Clerk and Office Manager; Special Inspector; Chief Clerk.
Hathaway, H. K., Tabor Manufacturing Company.	Special Inspector.
Hering, Carl, Consulting Electrical Engineer.	Chief, Electrical Bureau.
Hoskins, W. Horace, Veterinarian.	Assistant Meat and Cattle Inspector; Chief Meat and Cattle Inspector; Veterinary Surgeon.
Idell, Col. W. F., Accountant, Colonel First Regiment Infantry, N. G. P.	Drillmaster, Bureau of Police and Fire.
Jamison, Doctor, United States Civil Service Commission.	Veterinary Surgeon.
Jenks, Robert D., Attorney at Law.	Chief and Assistant Examiner.
Judge, Edw. F., Builder.	Building Inspector.
Kelsey, Albert, Architect.	Secretary of Committee on Comprehensive Plans.

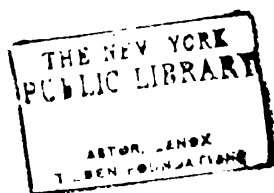
<i>Name and Occupation.</i>	<i>Examinations Conducted.</i>
Kessler, Andrew, Tailor.	Foreman of Tailoring.
Klein, L. H., Professor Veterinary Department, University of Pennsylvania.	Assistant Meat and Cattle Inspector; Veterinary Surgeon.
Kohler, Charles, Chemist.	Third Assistant Apothecary.
Kirkpatrick, George E., Superintendent Girard Estate.	Elevator Inspector; Chief, Bureau of City Property.
Leibig, S. W., Druggist.	Third Assistant Apothecary.
Lentz, Frank, Veterinarian.	Assistant Meat and Cattle Inspector.
Lukens, John M., Chief, Bureau of Boiler Inspection.	Superintendent of Repair Shop; Engineer in Charge of Boilers; Engineer less than \$800; Engineer, \$800-\$1,100; Engineer, \$1,100 and over; Machinist; Pumpman; Chief Engineer; Engineman; Steam Hoisting Engineer; Asphalt Roller Engineer; Engineer on Boat.
MacKenzie, R. Tait, Physical Director, University of Pennsylvania.	Medical Examiner; Assistant Medical Examiner.
McKeehan, Chas. L., Attorney at Law.	Investigator; Special Evidence Agent.
Manning, Wm. McDowell, Estimating Department, Otis Elevator Company.	Elevator Inspector.
Mason, W. Clarke, Attorney at Law.	Writ Server; Notice Server.
Mebus, Charles F., Engineer.	Assistant Commissioner of Highways.
Montgomery, W. W., Attorney at Law.	Investigator; Special Evidence Agent.
Nevin, W. L., Attorney at Law, Charge of Wanamaker Real Estate.	Chief, Bureau of City Property.
Newman, Bernard, Secretary Housing Commission.	Nuisance Inspector.

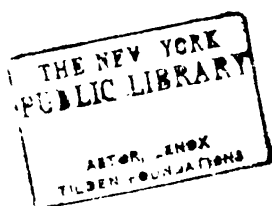
<i>Name and Occupation.</i>	<i>Examinations Conducted.</i>
Oelschlager, Chas. E., Engineer and Architect.	Special Inspector, H. P. F. S.; Third Assistant Engineer, H. P. F. S.; Draftsman, \$1000; Draftsman, \$900; Rodman; Transitman; Draftsman, \$950; Building Inspector.
Pearson, Enoch W., Director of Music, Board of Education.	Musical Instructor.
Quimby, Henry H., Assistant Engineer, Bridge Division, Survey Bureau.	Assistant Commissioner of Highways.
Reed, James, Assistant Director of Public Works.	Superintendent of Repair Shop; Chief Engineer; Chauffeur.
Richards, Isaac, General Manager, Otis Elevator Company.	Chief, Elevator Inspector.
Rowland, Arthur J., Director, Drexel Institute.	Manager, Electrical Bureau.
Sinkler, Francis W., Physician.	Medical Examiner; Assistant Medical Examiner.
Smith, Doctor, United States Fish Commission.	Director Aquarium.
Stamm, Norman L., Engineer Wharves, Docks and Ferries.	Inspector of Steel; Assistant Inspector Concrete and Masonry; Inspector of Highways.
Stecher, Wm. A., Physical Director, Board of Education.	Assistant Teacher; Teacher; Principal; Swimming Teacher.
Taylor, A. Merritt, Engineer.	Secretary of Committee on Comprehensive Plans.
Taylor, W. P., Assistant Engineer, Testing Laboratory.	Assistant Commissioner of Highways.
Temple, W. S., Professor Electrical Engineering, University of Pennsylvania.	Manager of Electrical Bureau.
Tillson, George, Borough Engineer, Brooklyn, N. Y.	Chief, Bureau of Highways.
Uhler, W. D., Engineer.	Rammer; Paver.
Very, Edward B., Department of Street Cleaning, New York.	Inspector of Street Cleaning.
Vogelson, John A., Chief, Bureau of Health.	Principal Assistant.

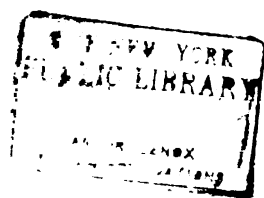
<i>Name and Occupation.</i>	<i>Examinations Conducted.</i>
Wales, G. R., Chief Examiner, United States Civil Service Commission.	Chief Examiner; Assistant Ex- aminer; Extra Examiner.
Walnut, T. Henry, Attorney at Law.	Chief Clerk and Office <i>Manager</i> Civil Service Commission.
Webb, Walter Loring, Engineer.	Inspector of Street Cleaning.
Whittaker, Maj. B. H., Publisher and Business Manager <i>Ameri- can Catholic Quarterly Review</i> , Adjutant General, First Bri- gade, N. G. P.	Drillmaster, Bureau of <i>Police</i> and Fire.
Woodward, George, Physician.	Nuisance Inspector.
Yocum, Howard H., Attorney at Law.	Special Agent; Department Health and Charities; <i>Matr</i> Department of Law.
Ziegler, J. Charles, Engineer.	Inspector of Street Cleaning.

THE NEW YORK
PUBLIC LIBRARY
ASTOR, LENOX
TILDEN FOUNDATIONS

<i>Name and Occupation.</i>	<i>Examinations Conducted.</i>
Wales, G. R., Chief Examiner, United States Civil Service Commission.	Chief Examiner; Assistant Ex- aminer; Extra Examiner.
Walnut, T. Henry, Attorney at Law.	Chief Clerk and Office Manager, Civil Service Commission.
Webb, Walter Loring, Engineer.	Inspector of Street Cleaning.
Whittaker, Maj. B. H., Publisher and Business Manager <i>Ameri- can Catholic Quarterly Review</i> , Adjutant General, First Bri- gade, N. G. P.	Drillmaster, Bureau of Police and Fire.
Woodward, George, Physician.	Nuisance Inspector.
• Yocum, Howard H., Attorney at Law.	Special Agent; Department of Health and Charities; Matron, Department of Law.
Ziegler, J. Charles, Engineer.	Inspector of Street Cleaning.







APPENDIX D

I.

COMPETITIVE CLASS.

APPOINTMENTS (Exclusive of Promotions).

The Summary.

OFFICE OF THE MAYOR	37
Mayor's Office	2
Bureau of Contracts and Statistics	2
Bureau of Comprehensive Plans	0
Board of Recreation	33
Public Aquarium	0
City Planning Exhibition	0
DEPARTMENT OF PUBLIC SAFETY	514
Director's Office	0
Bureau of Police	277
Fire Marshal's Office	6
Bureau of Fire	111
Electrical Bureau	41
Bureau of City Property	46
Bureau of Boiler Inspection	2
Bureau of Correction	14
Bureau of Building Inspection	7
Bureau of Elevator Inspection	10
DEPARTMENT OF PUBLIC WORKS	412
Director's Office	10
Bureau of Highways and Street Cleaning	164
Board of Highway Supervisors	2
Bureau of Lighting	2
Bureau of Gas	0
Bureau of Surveys	88
Bureau of Water	146
DEPARTMENT OF SUPPLIES	15
DEPARTMENT OF PUBLIC HEALTH AND CHARITIES.....	229
Director's Office	4
Bureau of Health	84
Bureau of Charities	141
DEPARTMENT OF WHARVES, DOCKS AND FERRIES	6
CIVIL SERVICE COMMISSION	24
DEPARTMENT OF LAW	20
Total	1,257

COMPETITIVE CLASS.
I. APPOINTMENTS (EXCLUSIVE OF PROMOTIONS).
OFFICE OF THE MAYOR.

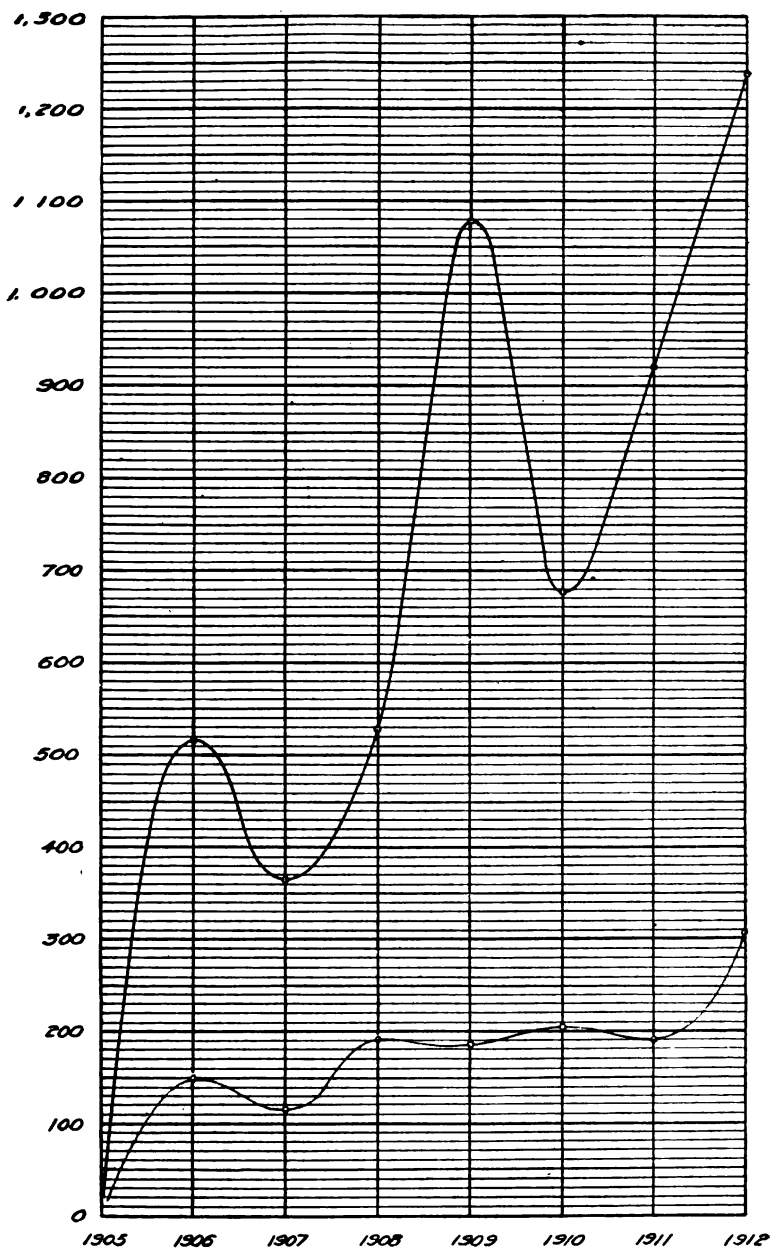
MAYOR'S OFFICE.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Glenn O. Martin.....	Chauffeur	\$1,000 00 per annum..	Feb. 28, 1911.....	June 17, 1911.....	3	81.98	Feb. 5, 1912.
Mary J. McAllister.....	Stenographer and Typewriter.....	1,000 00 per annum..	Mar. 25, 1912.....	April 19, 1912.....	6	90.46	May 13, 1912.

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BUREAU OF CONTRACTS AND STATISTICS.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Nathaniel E. Jaffe.....	Clerk, Extra	\$3 00 per day	Jan. 11, 1912.....	Jan. 19, 1912.....	10	93.85	Dec. 3, 1912.
Mary E. Keenan.....	Stenographer and Typewriter.....	1,000 00 per annum..	Mar. 25, 1912.....	April 19, 1912.....	4	93.31	May 1, 1912.



COMPETITIVE CLASS.

Original Appointments —
Examinations Held —



BOARD OF RECREATION.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
George W. Ayres.....	Caretaker	\$720 00 per annum.	Feb. 28, 1912.	April 16, 1912.	12	96.40	May 25, 1912.
Henry Blair	Caretaker	720 00 per annum.	Feb. 28, 1912.	April 16, 1912.	11	96.50	May 3, 1912.
Peter F. Corcoran.....	Caretaker	720 00 per annum.	Feb. 28, 1912.	April 16, 1912.	29	94.30	July 1, 1912.
James McGarry.....	Caretaker	720 00 per annum.	Feb. 28, 1912.	April 16, 1912.	5	97.30	May 2, 1912.
Richard F. Marter.....	Caretaker, Assistant	600 00 per annum.	Feb. 28, 1912.	April 16, 1912.	20	94.90	June 1, 1912.
Charles W. Robinson.....	Caretaker, Assistant	600 00 per annum.	Feb. 28, 1912.	April 16, 1912.	27	94.40	June 27, 1912.
Charles F. Augustine.....	Janitor	600 00 per annum.	Feb. 28, 1912.	April 16, 1912.	15	96.20	May 22, 1912.
Willard S. Brown	Janitor	600 00 per annum.	Feb. 28, 1912.	April 16, 1912.	10	96.50	May 2, 1912.
Peter P. Oasey.....	Janitor	720 00 per annum.	Feb. 28, 1912.	April 16, 1912.	22	94.70	June 1, 1912.
Harry K. Clare.....	Janitor	720 00 per annum.	Feb. 28, 1912.	April 16, 1912.	36	93.40	July 9, 1912.
John A. Dixon.....	Janitor	720 00 per annum.	Feb. 28, 1912.	April 16, 1912.	30	94.20	July 1, 1912.
James A. Murtha.....	Janitor	600 00 per annum.	Feb. 28, 1912.	April 16, 1912.	39	96.30	Aug. 1, 1912.
John G. Schneider.....	Janitor	600 00 per annum.	Feb. 28, 1912.	April 16, 1912.	18	96.40	June 5, 1912.
Raymond A. Taylor.....	Janitor	600 00 per annum.	Feb. 28, 1912.	April 16, 1912.	9	96.50	June 11, 1912.
James B. Kelly.....	Janitor, Assistant	600 00 per annum.	Feb. 28, 1912.	April 16, 1912.	35	93.60	July 8, 1912.
William H. Rees.....	Janitor, Assistant	600 00 per annum.	Feb. 28, 1912.	April 16, 1912.	23	94.40	June 26, 1912.
Margaret A. Dolan.....	Janitress	600 00 per annum.	Mar. 12, 1912.	April 17, 1912.	9	94.64	May 23, 1912.

Board of Recreation—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Mrs. Esther Eaudenbush	Janitress	\$600 00 per annum	Mar. 12, 1912	April 17, 1912	10	94.48	May 20, 1912.
Francis J. Cullen	Messenger	600 00 per annum	Feb. 28, 1912	April 16, 1912	8	97.89	May 2, 1912.
Burton Doyle	Principal	1,200 00 per annum	Mar. 13, 1912	April 9, 1912	4	71.5	June 1, 1912.
Fred. A. Finkelday, Jr.	Principal	1,200 00 per annum	Mar. 13, 1912	April 9, 1912	2	86.86	April 17, 1912.
Phillip O. Jacobus	Principal	1,300 00 per annum	Mar. 13, 1912	April 9, 1912	1	90.	May 1, 1912.
Burton Doyle	Teacher	80 00 per month	Mar. 12, 1912	April 9, 1912	3	74.65	May 1, 1912.
Caroline B. Liveright	Teacher	80 00 per month	Mar. 12, 1912	April 9, 1912	4	73.86	May 1, 1912.
Ethel L. Pugh	Teacher	80 00 per month	Mar. 12, 1912	April 9, 1912	2	83.4	May 1, 1912.
John B. Crescenzo	Teacher, Assistant	65 00 per month	Mar. 12, 1912	April 9, 1912	7	71.86	May 1, 1912.
Leonard P. Jacobus	Teacher, Assistant	80 00 per month	Mar. 12, 1912	April 9, 1912	1	90.8	May 1, 1912.
Sue A. Jacobus	Teacher, Assistant	65 00 per month	Mar. 12, 1912	April 9, 1912	4	79.6	May 1, 1912.
Elma E. Korb	Teacher, Assistant	65 00 per month	Mar. 12, 1912	April 9, 1912	6	74.4	May 1, 1912.
Edna I. Laughlin	Teacher, Assistant	65 00 per month	Mar. 12, 1912	April 9, 1912	8	70.55	May 1, 1912.
Anna H. Mellinger	Teacher, Assistant	65 00 per month	Mar. 12, 1912	April 9, 1912	2	87.7	May 1, 1912.
Peter Schmid	Teacher, Assistant	65 00 per month	Mar. 12, 1912	April 9, 1912	3	79.5	May 1, 1912.
Elizabeth K. Walsh	Teacher, Assistant	65 00 per month	Mar. 12, 1912	April 9, 1912	9	70.35	May 1, 1912.

DEPARTMENT OF PUBLIC SAFETY.

BUREAU OF POLICE.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Elizabeth Frowe	Cleaner	\$20 00 per month.	Mar. 12, 1912.	April 17, 1912.	27	99.51	Dec. 6, 1912.
Margaret B. Keyser	Cleaner	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	17	97.90	Oct. 2, 1912.
Anna E. Reichert	Cleaner	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	4	96.59	April 26, 1912.
Anna D. Shubert	Cleaner	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	6	96.39	May 16, 1912.
Isabel Yetter	Cleaner	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	19	92.20	Oct. 13, 1912.
William J. Cooley	Clerk, Record	1,600 00 per annum.	Mar. 2, 1912.	April 1, 1912.	2	90.38	Dec. 31, 1912.
Edward O. Schlesinger	Clerk, Storehouse	900 00 per annum.	July 10, 1912.	July 29, 1912.	1	91.25	Aug. 9, 1912.
James Donnelly	Fireman on Boat	1,000 00 per annum.	Oct. 18, 1912.	Nov. 13, 1912.	2	84.	Nov. 27, 1912.
William H. Allison	Guard, City Hall	2 25 per day.	May 24, 1911.	June 22, 1911.	11	79.	Feb. 10, 1912.
William B. Connally	Hostler	720 00 per annum.	July 16, 1912.	July 22, 1912.	5	88.8	Aug. 26, 1912.
Martha J. Heffernan	Hostler	720 00 per annum.	July 16, 1912.	July 22, 1912.	4	89.6	July 23, 1912.
Alexander Marr	Hostler	720 00 per annum.	July 16, 1912.	July 22, 1912.	6	86.6	Aug. 26, 1912.
Edward J. Smith	Hostler	720 00 per annum.	July 16, 1912.	July 22, 1912.	2	90.8	July 23, 1912.
Samuel F. Smith	Hostler	720 00 per annum.	July 16, 1912.	July 22, 1912.	8	79.4	Aug. 26, 1912.
Ella T. Wagner	Jenitress	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	13	88.40	June 25, 1912.
Mary O. Moore	Matron, Assistant	650 00 per annum.	July 23, 1912.	July 31, 1912.	3	89.	Sept. 5, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Fred. G. Amerbach	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	116	79.15	April 29, 1912.
Edward J. Alburger	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	100	77.1	May 1, 1912.
Oliver Alexander	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	298	70.7	Oct. 21, 1912.
Oliver B. Applegate, Jr.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	127	78.5	April 29, 1912.
William J. Archer	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	137	78.15	May 1, 1912.
Allen S. Baker	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	75	81.35	April 29, 1912.
Moses T. Barrett	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	142	78.	May 1, 1912.
J. Garfield Bartle	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	94	80.3	April 29, 1912.
William H. Battersby	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	225	74.25	July 16, 1912.
John Beckmann	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	163	77.05	May 1, 1912.
Edward Bellerby	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	120	78.95	April 29, 1912.
William R. Bender	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	179	76.	May 1, 1912.
Howard H. Bezold	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	251	73.05	July 16, 1912.
Herman Binstadt	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	306	70.35	Oct. 21, 1912.
Winfield T. Bireley	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	293	72.75	July 16, 1912.
Edward B. Bloom	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	167	76.65	May 1, 1912.
Albert V. Bowman	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	111	76.35	April 29, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
4 88 Harry O. Bowman.	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	151	77.4	May 1, 1912.
James Brennan	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	147	77.85	May 1, 1912.
John J. Brennan.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	289	71.4	Sept. 10, 1912.
George W. Brown.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	88	80.55	April 29, 1912.
James V. Brown.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	208	75.15	May 1, 1912.
Robert Brown	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	216	74.75	July 16, 1912.
Thomas P. Burns.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	121	78.7	April 29, 1912.
Carl Oaine	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	56	82.65	April 29, 1912.
Robert Callahan, Jr.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	205	75.1	May 1, 1912.
William Campbell	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	230	71.75	Sept. 10, 1912.
Joseph M. Cannon.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	8	89.40	April 24, 1912.
Peter L. Carr.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	261	72.75	July 16, 1912.
John J. Carrigan.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	82	80.85	April 29, 1912.
Ollie Oarroll	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	96	80.2	April 29, 1912.
Thomas A. Oarroll.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	26	84.8	April 24, 1912.
Lucius F. Carter.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	207	75.	May 1, 1912.
Michael T. Caulfield.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	132	78.85	April 29, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
George Clark	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	84	80.65	April 29, 1912.
James E. Clegg	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	7	80.85	April 24, 1912.
Matthew Clowry	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	106	79.5	April 29, 1912.
Charles Clouser	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	983	71.7	Sept. 10, 1912.
Andrew M. Cobbs	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	243	73.45	July 16, 1912.
Charles Cohen	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	27	84.75	April 24, 1912.
Thomas P. Cook	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	83	80.8	April 29, 1912.
Charles S. Conner	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	190	75.7	May 1, 1912.
Frank Connor	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	254	73.	July 16, 1912.
Joseph M. Cox	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	278	71.8	Sept. 10, 1912.
Thomas Crulse	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	229	74.15	July 16, 1912.
Colwyn Davies	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	314	70.1	Oct. 21, 1912.
James Davis	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	171	76.5	May 1, 1912.
James E. Davis	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	208	74.95	July 16, 1912.
William Dazely	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	187	75.8	May 1, 1912.
Herbert Dean	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	285	71.55	Sept. 10, 1912.
Franklin A. Dent	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	55	82.95	April 29, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Charles Derr	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	296	70.9	Oct. 21, 1912.
Joseph A. Devine	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	23	86.2	April 24, 1912.
Raymond Dixon	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	118	79.	April 29, 1912.
John J. Doherty	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	233	78.9	July 16, 1912.
Thomas P. Donnelly	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	206	76.	May 1, 1912.
Michael J. Dorsey	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	104	79.7	April 29, 1912.
Percy Doughty	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	74	81.35	April 29, 1912.
Frank B. Droughman	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	296	74.25	July 16, 1912.
Daniel Duffy	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	292	71.1	Sept. 10, 1912.
John R. Duncan	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	198	75.35	May 1, 1912.
William W. Ehmer	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	4	90.5	April 24, 1912.
Oden F. Eiselman	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	70	81.65	April 29, 1912.
William A. Faus	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	* 98	80.15	April 29, 1912.
William J. Ferguson	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	133	78.35	April 29, 1912.
Stephen F. Finnegan	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	30	84.55	April 24, 1912.
Ralph W. Fisher	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	41	83.7	April 24, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Joseph W. Frank.....	Patrolman.....	\$2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	86	80.6	April 29, 1912.
Nathan Friedenberg.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	2	90.55	April 24, 1912.
Frederick J. Gallagher.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	209	72.5	Sept. 10, 1912.
Hugh Gallagher.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	291	71.3	Sept. 10, 1912.
Robert Gamble, Jr.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	90	80.45	April 29, 1912.
William C. Geisdorf.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	247	73.2	July 16, 1912.
Abraham Gillman.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	79	81.05	April 29, 1912.
Nathaniel T. Gilpin.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	47	88.3	April 29, 1912.
Albert J. Gladen.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	16	86.8	April 24, 1912.
Charles J. Gorman.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	165	76.9	May 1, 1912.
Aaron M. Gottlieb.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	286	71.5	Sept. 10, 1912.
Albert H. Graber, Jr.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	276	71.8	Sept. 10, 1912.
Joseph O. Green.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	30	83.75	April 24, 1912.
John J. Gribbhn.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	162	77.1	May 1, 1912.
Grover W. Haase.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	54	82.85	April 29, 1912.
Peter Hagan.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	232	74.	July 16, 1912.
Julius W. Hahn.....	Patrolman.....	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	97	80.2	April 29, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Peter Hamilton	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	139	78.15	May 1, 1912.
Thomas R. Harbridge	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	33	84.3	April 24, 1912.
John A. Harkin	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	223	74.2	July 16, 1912.
Joseph B. Harris	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	167	77.2	May 1, 1912.
John Harvey	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	123	78.4	April 29, 1912.
Walter Hibbert	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	299	70.65	Oct. 21, 1912.
Jacob R. Hinkle, Jr.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	63	82.1	April 29, 1912.
Leon Hinkle	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	62	82.15	April 29, 1912.
Fred. Hofmann, Jr.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	300	70.65	Oct. 21, 1912.
George W. Howe	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	146	77.85	May 1, 1912.
Robert F. Hubbard	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	37	83.95	April 24, 1912.
John J. Hughes	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	294	70.9	Sept. 10, 1912.
Thos. F. Hundermark	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	180	75.95	May 1, 1912.
Martin A. Hushlon	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	170	76.5	May 1, 1912.
Manus J. Huston	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	259	72.8	July 16, 1912.
Morris Idell	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	217	74.75	July 16, 1912.
David H. Irons	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	242	73.5	July 16, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Robert Irvine	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	92	80.35	April 29, 1912.
William A. Jackson	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	124	78.6	April 29, 1912.
William A. Jackson	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	65	81.95	April 29, 1912.
Samuel A. James	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	80	81.	April 29, 1912.
Parke M. Jennings	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	114	79.25	April 29, 1912.
John D. Jones	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	241	73.5	July 16, 1912.
Richard L. Kahn	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	176	76.3	May 1, 1912.
Le Roy C. Keagle	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	131	78.35	April 29, 1912.
Jos. S. Kennedy	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	275	72.	Sept. 10, 1912.
John R. Kent	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	252	73.05	July 16, 1912.
George Kilne	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	281	71.75	Sept. 10, 1912.
George F. Knott	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	57	82.55	April 29, 1912.
Anthony J. Kolb	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	197	75.35	May 1, 1912.
Christian C. Krauss	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	240	73.6	July 16, 1912.
Albert J. Kubiak	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	166	76.75	May 1, 1912.
Edward H. Kunz	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	108	79.4	April 29, 1912.
George P. Lacey	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	73	81.55	April 29, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
John E. Lambert.	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	81	84.4	April 24, 1912.
James A. Lanahan.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	815	70.	Oct. 21, 1912.
Edward Landy	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	19	86.9	April 24, 1912.
John J. Landy.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	77	81.15	April 29, 1912.
Dennis J. Lane.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	223	74.4	July 16, 1912.
Theodore B. Langshaw.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	67	81.85	April 29, 1912.
George W. Lapp.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	15	87.15	April 24, 1912.
Samuel Lattimore	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	264	72.7	July 16, 1912.
Frederick P. LaVasseur.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	182	76.95	May 1, 1912.
Edward B. Lawler.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	87	80.6	April 29, 1912.
William L. Lawlor.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	308	70.85	Oct. 21, 1912.
John H. Leaser, Jr.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	287	71.45	Sept. 10, 1912.
John R. Leonard.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	49	88.15	April 29, 1912.
Charles W. Letzing.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	66	81.85	April 29, 1912.
William K. Lindeman.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	21	86.25	April 24, 1912.
Patrick J. Loftus.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	220	74.55	July 16, 1912.
Eugene J. McArdle.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	219	74.7	July 16, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Arthur J. McCormack.....	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	24	85.1	April 24, 1912.
John J. McCoy.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	243	73.15	July 16, 1912.
John J. McFadden.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	18	86.85	April 24, 1912.
George M. McFetridge.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	265	72.95	July 16, 1912.
Hugh W. McGarity.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	268	72.85	July 16, 1912.
Sarsfield J. McGowan.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	238	73.6	July 16, 1912.
Joseph P. McGurman.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	221	74.45	July 16, 1912.
Harry P. McHale.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	175	76.4	May 1, 1912.
Edward McKenzie.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	185	76.85	May -1, 1912.
James J. McLaughlin, Jr.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	95	80.25	April 29, 1912.
William J. McLaughlin.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	297	70.7	Oct. 21, 1912.
Harry A. Macready, Jr.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	10	88.75	April 24, 1912.
Edward J. Madden.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	271	72.05	Sept. 10, 1912.
Thomas P. Maginnis, Jr.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	202	76.2	May 1, 1912.
Henry F. Maith.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	12	86.6	April 24, 1912.
John Mall.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	239	73.6	July 16, 1912.
Joseph F. Markey.....	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	43	83.55	April 24, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
John E. Martin	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	8	90.55	April 24, 1912.
Arthur Medd	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	152	77.4	May 1, 1912.
Joseph V. Mellon	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	148	77.95	May 1, 1912.
Harvey R. Messick	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	48	83.25	April 29, 1912.
William H. Miles	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	244	73.4	July 16, 1912.
Paul B. Miller	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	52	88.	April 29, 1912.
William Milligan	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	26	84.	April 24, 1912.
Ernest J. Mittelberger	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	200	75.25	May 1, 1912.
Robert G. Monroe	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	201	75.25	May 1, 1912.
John F. Mooney	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	140	78.15	May 1, 1912.
Howard J. Moore	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	1	91.3	April 24, 1912.
Joseph S. Moore	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	76	81.25	April 29, 1912.
William Morrison	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	64	82.05	April 29, 1912.
David Muir	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	44	83.5	April 29, 1912.
Edward B. Muir	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	14	87.35	April 24, 1912.
Gray E. Murphy	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	32	84.35	April 24, 1912.
Martin O. Malley	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	164	76.95	May 1, 1912.

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Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Adley B. Ottinger	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	227	74.2	July 16, 1912.
James D. Patterson	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	60	82.3	April 29, 1912.
Jacob F. Patterson	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	115	79.2	April 29, 1912.
Charles L. Peters	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	25	84.9	April 24, 1912.
Holger M. Peterson	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	213	74.8	July 16, 1912.
George L. Phillips	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	17	86.85	April 24, 1912.
James W. Primm	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	813	70.15	Oct. 21, 1912.
John L. Pyle	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	245	73.85	July 16, 1912.
Bernard F. Quinn	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	224	73.8	July 16, 1912.
Allen C. Reed	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	29	84.6	April 24, 1912.
George J. Reeble	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	113	79.3	April 29, 1912.
Joseph H. Rees	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	309	70.35	Oct. 21, 1912.
William H. Randolph	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	58	82.5	April 29, 1912.
Albert B. Rheiner, Jr.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	274	73.05	Sept. 10, 1912.
William B. Rodebaugh	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	148	77.8	May 1, 1912.
Joseph H. Ryan	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	69	81.8	April 29, 1912.
Thomas B. Ryan	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	84	84.15	April 24, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
John A. Huff, Jr.	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	178	76.1	May 1, 1912.
Anthony Salvina	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	192	75.6	May 1, 1912.
Charles F. Schaub	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	312	70.2	Oct. 21, 1912.
Joseph W. Schwartz	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	101	79.95	April 29, 1912.
John M. Scott	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	212	74.85	July 16, 1912.
Robert E. Scott	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	224	74.35	July 16, 1912.
Samuel Scott	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	262	72.75	July 16, 1912.
John W. Sella	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	266	72.6	July 16, 1912.
Robert H. Shaw	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	172	76.5	May 1, 1912.
Henry Simenton	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	125	78.6	April 29, 1912.
William T. Slek	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	71	81.6	April 29, 1912.
Watson Smalley	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	246	73.2	July 16, 1912.
Frank J. Smith	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	272	72.05	Sept. 10, 1912.
John F. Smith	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	270	72.1	Sept. 10, 1912.
Leo A. Smith	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	136	78.2	May 1, 1912.
William H. Smith	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	11	86.65	April 24, 1912.
George F. Snyder	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	293	72.5	July 16, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William Spizer	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	173	76.45	May 1, 1912.
William J. Sproul	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	181	75.95	May 1, 1912.
William F. Stamper	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	211	74.85	July 16, 1912.
John L. Stevens, Jr.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	293	70.95	Sept. 10, 1912.
Albert J. Stokes	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	53	82.9	April 29, 1912.
Fred Swartz	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	301	70.6	Oct. 21, 1912.
James Sweeney	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	153	77.3	May 1, 1912.
John J. Taggart	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	134	78.3	May 1, 1912.
James G. Thistle	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	194	75.5	May 1, 1912.
Thomas C. Thompson	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	189	75.7	May 1, 1912.
Charles F. Tryon	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	256	72.85	July 16, 1912.
William H. Unverzagt	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	159	77.15	May 1, 1912.
Wyleys M. Van Osten	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	45	83.4	April 29, 1912.
Francis J. Walsh	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	191	76.6	May 1, 1912.
Samuel Warren, Jr.	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	156	77.25	May 1, 1912.
Irland A. Watts	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	102	79.9	April 29, 1912.
Robert W. Weaver	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	290	71.3	Sept. 10, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Edward Weckerly	Patrolman	\$2 25 per day	Feb. 13, 1912	Mar. 12, 1912	214	74.8	July 16, 1912.
William Wehn	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	93	80.35	April 29, 1912.
Frank Weindel	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	209	74.95	July 16, 1912.
Roy White	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	284	71.6	Sept. 10, 1912.
James H. Whiteley	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	81	81.	April 29, 1912.
James Wilson	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	305	70.45	Oct. 21, 1912.
Joseph M. Worthline	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	105	79.6	April 29, 1912.
Theodore L. Worthline	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	123	78.6	April 29, 1912.
Louis Woelfel	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	78	81.15	April 29, 1912.
William F. Woodhead	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	99	80.05	April 29, 1912.
Frederick Wyman	Patrolman	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	117	79.1	April 29, 1912.
Charles E. Anstotz	Patrolman, Mounted	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	25	81.3	Oct. 21, 1912.
Ernst F. Biederman	Patrolman, Mounted	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	22	81.9	July 16, 1912.
Romanus Fellman	Patrolman, Mounted	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	18	82.2	July 16, 1912.
Lawrence W. Fox	Patrolman, Mounted	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	107	79.5	April 29, 1912.
Edward J. Gartland	Patrolman, Mounted	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	11	82.9	May 1, 1912.
Joseph Ginty	Patrolman, Mounted	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	6	83.7	May 1, 1912.
Charles D. Grover	Patrolman, Mounted	2 25 per day	Feb. 13, 1912	Mar. 12, 1912	7	83.8	May 1, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
James J. Hasson.....	Patrolman, Mounted	\$2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	29	81.05	Nov. 30, 1912.
Edward J. Hicks.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	15	82.65	May 1, 1912.
Robert Hynds.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	30	81.	Nov. 30, 1912.
James G. Madison.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	26	81.15	Nov. 30, 1912.
William Magel.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	23	81.6	July 16, 1912.
Edwin H. Maler.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	16	82.35	July 16, 1912.
George Manz.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	12	82.9	May 1, 1912.
Charles P. Mungan.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	1	86.7	May 1, 1912.
Joseph E. Murphy.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	6	83.85	May 1, 1912.
Hughey J. Owens.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	27	81.05	Nov. 30, 1912.
William Schaal, Jr.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	20	82.1	July 16, 1912.
Howard E. Selders.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	32	80.95	Nov. 30, 1912.
Jack Stahle.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	13	82.9	May 1, 1912.
William Reynolds.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	8	86.1	May 1, 1912.
Herman Thomas.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	2	86.7	May 1, 1912.
Joseph A. Weigand.....	Patrolman, Mounted	2 25 per day.....	Feb. 13, 1912.....	Mar. 12, 1912.....	21	82.	July 16, 1912.
Archibald O. Frederick.....	Photographer, Assistant	1,200 00 per annum...	Oct. 8, 1912.....	Oct. 22, 1912.....	4	80.	Oct. 24, 1912.

Bureau of Police—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Granville S. Jefferson.....	Pilot	\$1,250 00 per annum.....	Oct. 18, 1912.....	Oct. 30, 1912.....	1	83.5	Nov. 1, 1912.
William H. O. Neff.....	Superintendent of Horses.....	1,800 00 per annum.....	July 12, 1912.....	July 20, 1912.....	2	87.	July 24, 1912.
Lyman D. Carns.....	Superintendent of Horses, Asst.....	800 00 per annum.....	July 12, 1912.....	July 20, 1912.....	4	85.9	Nov. 11, 1912.
Samuel S. Bechtel.....	Van Driver	900 00 per annum.....	July 29, 1912.....	Aug. 6, 1912.....	2	89.2	Sept. 23, 1912.
David Hammel	Van Driver	900 00 per annum.....	July 29, 1912.....	Aug. 6, 1912.....	5	87.85	Oct. 3, 1912.
James M. Stowman.....	Watchman	2 25 per day.....	May 24, 1911.....	June 22, 1911.....	10	78.3	Jan. 17, 1912.

FIRE MARSHAL'S OFFICE.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
George W. Elliott.....	Fire Marshal, Assistant.....	\$2,000 00 per annum.....	Oct. 17, 1912.....	Nov. 13, 1912.....	1	82.5	Nov. 24, 1912.
William H. Coupe, Jr.....	Inspector	1,200 00 per annum.....	Oct. 17, 1912.....	Nov. 18, 1912.....	2	89.37	Nov. 21, 1912.
Harry N. Frame.....	Inspector	1,200 00 per annum.....	Oct. 17, 1912.....	Nov. 18, 1912.....	6	85.79	Dec. 14, 1912.
Stephen J. McCarthy.....	Inspector	1,200 00 per annum.....	Oct. 17, 1912.....	Nov. 18, 1912.....	9	82.2	Dec. 14, 1912.
William F. Tate.....	Inspector	1,200 00 per annum.....	Oct. 17, 1912.....	Nov. 18, 1912.....	8	82.94	Dec. 14, 1912.
John P. Tierney.....	Inspector	1,200 00 per annum.....	Oct. 17, 1912.....	Nov. 18, 1912.....	4	86.9	Nov. 21, 1912.

BUREAU OF FIRE.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
John Kerr	Blacksmith	\$1,000 00 per annum.	June 2, 1911.	July 17, 1911.	3	93.8	Jan. 10, 1912.
George S. Murphy, Sr.	Blacksmith's Helper	800 00 per annum.	June 2, 1911.	July 17, 1911.	2	90.1	April 12, 1912.
Margaret H. Dyson	Cleaner	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	3	96.66	May 16, 1912.
Mrs. Agnes Erne	Cleaner	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	1	97.66	April 28, 1912.
Susan Jefferson	Cleaner	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	21	92.	Nov. 19, 1912.
Marie L. Knodel	Cleaner	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	15	93.24	Aug. 23, 1912.
Ellen L. Letta	Cleaner	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	25	90.90	Dec. 11, 1912.
Cecelia Marshall	Cleaner	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	22	91.8	Oct. 29, 1912.
Annie M. Mellon	Cleaner	40 00 per month.	Mar. 12, 1912.	April 17, 1912.	24	91.	Nov. 21, 1912.
Annie C. Roellig	Cleaner	50 00 per month.	Mar. 12, 1912.	April 17, 1912.	15	98.40	Aug. 28, 1912.
Annie E. Thompson	Cleaner	25 00 per month.	Mar. 12, 1912.	April 17, 1912.	23	90.50	Dec. 24, 1912.
Arthur J. Donnelly	Engineer, 2d Assistant, H. P. F. S.	1,500 00 per annum.	Oct. 24, 1912.	Nov. 22, 1912.	1	95.	Nov. 27, 1912.
Arthur J. Donnelly	Engineer, 3d Assistant, H. P. F. S.	1,000 00 per annum.	Feb. 26, 1912.	May 7, 1912.	1	99.5	May 13, 1912.
James F. Hamilton	Engineer, 3d Assistant, H. P. F. S.	1,000 00 per annum.	Feb. 26, 1912.	May 7, 1912.	2	92.25	May 27, 1912.
George Hayes	Fireman on Boat.	1,100 00 per annum.	Oct. 18, 1912.	Nov. 18, 1912.	4	78.6	Dec. 16, 1912.
Francis O. Armstrong	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	6	84.66	Dec. 6, 1912.
Andrew J. Anderson	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	75	71.6	Oct. 23, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Frederick Austin	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	7	84.9	April 24, 1912.
Arthur J. Baxter	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	12	79.2	Dec. 5, 1912.
Frederick Benham	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	45	76.5	June 18, 1912.
William Boardman	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	9	81.83	Dec. 5, 1912.
Joseph Leo Boves	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	13	76.85	Dec. 5, 1912.
William A. Blattner	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	54	75.1	July 17, 1912.
Robert F. Brulte	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	58	76.25	June 18, 1912.
Thomas Bryan	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	71	72.15	Sept. 23, 1912.
Courtland R. Buckle	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	33	77.85	April 24, 1912.
Charles W. Cantrell	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	19	83.55	April 24, 1912.
William W. Clark	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	6	85.15	April 24, 1912.
Robert S. Crawford	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	49	77.15	June 18, 1912.
Edward F. Crosson	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	64	78.3	July 29, 1912.
Harry A. Curry	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	31	78.35	June 18, 1912.
William J. Curry	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	1	90.1	April 24, 1912.
Benjamin B. Denny	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	21	72.65	Dec. 5, 1912.
Harrison M. Dills	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	49	76.35	June 18, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Michael J. Dolan, Jr.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	62	75.8	Jan. 10, 1912.
Joseph J. Elleser	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	1	75.8	April 12, 1912.
William H. Feeney	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	8	75.8	May 16, 1912.
William J. Ferguson	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	24	75.8	April 24, 1912.
Charles J. Fisher	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	11	75.8	Nov. 19, 1912.
Joseph A. Fiender	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	60	75.8	Aug. 28, 1912.
Joseph F. Ford	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	20	75.8	Feb. 11, 1912.
Adolf R. Fulst	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	32	75.8	Feb. 29, 1912.
Harry T. Gaul, Jr.	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	15	75.8	Feb. 21, 1912.
Herbert Gunn	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	7	75.8	Feb. 9, 1912.
Walter G. Headley	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	74	75.8	Dec. 1912.
Matthew G. Hemphill	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	36	75.8	Sept. 9, 1912.
John Hinferty	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	37	75.8	June 18, 1912.
John J. Hobson	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	48	75.8	June 18, 1912.
Frank J. Hochmuth	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	15	75.8	Dec. 5, 1912.
John A. Hughes	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	57	75.8	July 17, 1912.
George Louis Hutt	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	19	75.8	Dec. 5, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William Kramer	Hoseman	\$900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	22	81.	April 24, 1912.
John G. Lambert	Hoseman	900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	12	83.25	April 24, 1912.
George Lanigan	Hoseman	900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	72	72.15	Sept. 23, 1912.
James H. Lawn	Hoseman	900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	76	71.5	Oct. 23, 1912.
Frank F. Leyer	Hoseman	900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	5	86.25	April 24, 1912.
Daniel A. Lindsay	Hoseman	900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	23	80.8	April 24, 1912.
Harry D. Lindsay	Hoseman	900 00 per annum.	Oct. 26, 1912	Nov. 4, 1912	10	81.05	Dec. 5, 1912.
Joseph W. Lindsay	Hoseman	900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	3	86.65	April 24, 1912.
Max P. Lorz	Hoseman	900 00 per annum.	Oct. 26, 1912	Nov. 4, 1912	8	82.1	Dec. 5, 1912.
Michael L. Lucy	Hoseman	900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	2	87.7	April 24, 1912.
James J. McCusker	Hoseman	900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	50	76.15	June 18, 1912.
Edward MacElroy	Hoseman	900 00 per annum.	Oct. 26, 1912	Nov. 4, 1912	17	76.6	Dec. 5, 1912.
Joseph A. McGlone	Hoseman	900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	58	74.15	July 17, 1912.
Nathan P. Markel	Hoseman	900 00 per annum.	Oct. 26, 1912	Nov. 4, 1912	5	85.	Dec. 5, 1912.
Walter B. Mathews	Hoseman	900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	26	79.7	April 24, 1912.
John P. Matthews	Hoseman	900 00 per annum.	Oct. 26, 1912	Nov. 4, 1912	4	86.5	Dec. 5, 1912.
Ralph O. May	Hoseman	900 00 per annum.	Feb. 19, 1912	Mar. 16, 1912	51	75.9	June 18, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Edward H. Mengert.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	24	80.5	April 24, 1912.
Harry B. Meyer.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	16	81.7	April 24, 1912.
Faber B. Miller.	Hoseman	\$900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	22	71.55	Dec. 5, 1912.
Edwin S. Moore.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	68	72.35	July 29, 1912.
William M. Moore.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	56	74.7	July 17, 1912.
John E. Moran.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	67	72.4	July 29, 1912.
Charles Moritz.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	18	81.4	April 24, 1912.
John I. Murphy.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	73	71.9	Sept. 28, 1912.
Joseph L. Murtaugh.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	79	70.7	Oct. 23, 1912.
Jerry Ogden.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	11	83.3	April 24, 1912.
William T. Perry.	Hoseman	\$900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	13	79.15	Dec. 5, 1912.
George W. Richards.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	59	74.15	July 29, 1912.
George H. Riggs.	Hoseman	\$900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	20	74.8	Dec. 5, 1912.
Adolph P. Scheerbaum.	Hoseman	\$900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	16	77.25	Dec. 5, 1912.
Frederick Schoen.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	29	78.9	April 24, 1912.
William M. Showaker.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	28	78.9	April 24, 1912.
Frederick V. Siegel.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	42	76.6	June 18, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William G. Simpson.....	Hoseman	\$900 00 per annum....	Oct. 26, 1912.....	Nov. 4, 1912.....	3	87.86	Dec. 5, 1912.
Francis A. Smith.....	Hoseman	900 00 per annum....	Feb. 19, 1912.....	Mar. 16, 1912.....	19	81.86	April 24, 1912.
Edward E. Sprangers.....	Hoseman	900 00 per annum....	Oct. 26, 1912.....	Nov. 4, 1912.....	2	87.4	Dec. 5, 1912.
Howard G. Stevens.....	Hoseman	900 00 per annum....	Feb. 19, 1912.....	Mar. 16, 1912.....	48	76.55	June 18, 1912.
Norman C. Struse.....	Hoseman	900 00 per annum....	Feb. 19, 1912.....	Mar. 16, 1912.....	70	72.3	Sept. 23, 1912.
John J. Sweney.....	Hoseman	900 00 per annum....	Feb. 19, 1912.....	Mar. 16, 1912.....	14	82.45	April 24, 1912.
George V. Thomas.....	Hoseman	900 00 per annum....	Feb. 19, 1912.....	Mar. 16, 1912.....	9	84.25	April 24, 1912.
Joseph Van Sciver.....	Hoseman	900 00 per annum....	Feb. 19, 1912.....	Mar. 16, 1912.....	4	86.15	April 24, 1912.
Joseph M. Wills.....	Hoseman	900 00 per annum....	Feb. 19, 1912.....	Mar. 16, 1912.....	52	75.55	June 18, 1912.
Walter H. Wohlshlagel.....	Hoseman	900 00 per annum....	Feb. 19, 1912.....	Mar. 16, 1912.....	77	71.4	Oct. 23, 1912.
John Lattimer.....	Inspector, Special, H. P. F. S.	1,000 00 per annum....	Oct. 15, 1912.....	Nov. 22, 1912.....	3	77.	Nov. 27, 1912.
Charles H. Dye.....	Oiler	800 00 per annum....	July 10, 1912.....	July 19, 1912.....	10	91.3	Aug. 23, 1912.
William C. N. Stuart.....	Oiler	800 00 per annum....	April 13, 1911.....	May 4, 1911.....	5	82.6	Feb. 19, 1912.
James Weaver.....	Painter, Wagon.....	1,000 00 per annum....	Oct. 19, 1911.....	Nov. 15, 1911.....	6	84.36	Oct. 29, 1912.
Charles F. Whitlock.....	Painter, Wagon.....	1,000 00 per annum....	Oct. 10, 1911.....	Nov. 15, 1911.....	2	94.18	June 3, 1912.
George L. Harris.....	Plumber	900 00 per annum....	Sept. 9, 1912.....	Sept. 18, 1912.....	9	92.20	Oct. 23, 1912.
J. James Edelman.....	Rodman	720 00 per annum....	Mar. 6, 1912.....	May 6, 1912.....	13	80.2	Oct. 1, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Abraham C. Fisher	Rodman	\$720 00 per annum.	Mar. 6, 1912.	May 6, 1912.	18	70.32	Oct. 14, 1912.
Henry Linker	Rodman	720 00 per annum.	Mar. 6, 1912.	May 6, 1912.	12	82.2	Oct. 9, 1912.
Alfred P. Walls, Jr.	Rodman	720 00 per annum.	Mar. 6, 1912.	May 6, 1912.	17	73.16	Oct. 14, 1912.
James J. McCauley	Stenographer and Typewriter	900 00 per annum.	Mar. 22, 1912.	April 19, 1912.	30	72.34	July 15, 1912.
Samuel B. White	Stenographer and Typewriter	900 00 per annum.	Mar. 19, 1912.	April 19, 1912.	8	88.66	May 1, 1912.
Thomas Reed	Superintendent of Repair Shop.	1,800 00 per annum.	Mar. 1, 1912.	April 12, 1912.	1	93.66	April 30, 1912.
George S. Walker	Superintendent of Repair Shop.	1,800 00 per annum.	Mar. 1, 1912.	April 12, 1912.	6	78.	May 16, 1912.
Joseph B. Seltzer	Veterinarian	2,000 00 per annum.	Sept. 10, 1912.	Sept. 23, 1912.	2	71.9	Oct. 1, 1912.
Joseph P. Gerety	Veterinarian	1,200 00 per annum.	Sept. 10, 1912.	Sept. 23, 1912.	3	70.2	Oct. 17, 1912.

ELECTRICAL BUREAU.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William J. Farrell	Bricklayer	\$5 00 per day	June 2, 1911	July 17, 1911	2	90.6	Mar. 26, 1912.
Clayton W. Pike	Chief	6,000 00 per annum.	July 15, 1912	July 31, 1912	1	88.67	Aug. 1, 1912.
Albert Solms	Clerk	900 00 per annum.	Mar. 18, 1912	May 13, 1912	2	92.11	July 19, 1912.
David J. Duffin	Clerk, Index	900 00 per annum.	Mar. 18, 1912	May 13, 1912	49	86.87	Oct. 17, 1912.
Walker R. Byers	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	7	87.5	Dec. 21, 1912.
Bernard J. Cassidy, Jr.	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	9	84.1	Dec. 21, 1912.
William J. Christy	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	5	89.	Dec. 21, 1912.
Horace P. Fisher	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	4	89.4	Dec. 21, 1912.
George W. J. Herrschoff	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	3	92.2	Dec. 21, 1912.
Robert Kelbaugh	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	1	92.5	Dec. 13, 1912.
Charles W. Packer	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	8	86.5	Dec. 21, 1912.
Charles Steele	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	6	89.	Dec. 21, 1912.
Walter S. Todd	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	2	92.5	Dec. 21, 1912.
James L. Hagy	Draftsman	1,100 00 per annum.	Oct. 14, 1912	Nov. 8, 1912	1	87.9	Dec. 21, 1912.
Alexander O. Betus	Dynamoman	1,200 00 per annum.	July 16, 1912	July 31, 1912	4	86.8	Aug. 6, 1912.
William Ahles	Elevator Operator	2 75 per day	July 17, 1912	Aug. 17, 1912	2	96.5	Dec. 21, 1912.
John T. Coulter	Elevator Operator	2 75 per day	July 17, 1912	Aug. 17, 1912	3	90.	Sept. 13, 1912.

Electrical Bureau—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William F. Hawk.	Elevator Operator	\$2 75 per day.	April 13, 1911.	May 10, 1911.	18	84.2	May 7, 1912.
Edward L. James.	Elevator Operator	2 75 per day.	July 17, 1912.	Aug. 17, 1912.	4	86.9	Aug. 27, 1912.
Samuel G. Minus.	Elevator Operator	2 75 per day.	April 13, 1911.	May 10, 1911.	17	85.04	April 12, 1912.
Ernest Mitzner	Elevator Operator	2 75 per day.	April 13, 1911.	May 10, 1911.	16	86.88	April 12, 1912.
James J. O'Shea.	Elevator Operator	2 75 per day.	July 17, 1912.	Aug. 17, 1912.	1	86.5	Sept. 6, 1912.
Silas P. Wilkerson.	Elevator Operator	2 75 per day.	April 13, 1911.	May 10, 1911.	15	86.5	April 12, 1912.
John C. Bennett.	Fireman	2 75 per day.	May 26, 1911.	July 29, 1911.	21	81.78	July 24, 1912.
Frazier Billips	Fireman	2 75 per day.	May 26, 1911.	July 29, 1911.	11	87.8	Jan. 15, 1912.
Stephen K. Boehmer.	Fireman	2 75 per day.	May 26, 1911.	July 29, 1911.	12	87.8	Jan. 15, 1912.
Charles Campbell	Fireman	2 75 per day.	July 27, 1912.	Aug. 6, 1912.	18	79.9	Dec. 23, 1912.
Fred. Coyne	Fireman	2 75 per day.	May 26, 1911.	July 29, 1911.	15	84.2	June 20, 1912.
Abraham Donahue	Fireman	2 75 per day.	May 26, 1911.	July 29, 1911.	13	87.54	Jan. 15, 1912.
William Greensmith	Fireman	2 75 per day.	May 26, 1911.	July 29, 1911.	16	82.44	May 16, 1912.
William O. Taylor, Jr.	Fireman	2 75 per day.	May 26, 1911.	July 29, 1911.	13	82.4	June 20, 1912.
James G. Mitchell, Jr.	Lineman	1,100 00 per annum.	Oct. 25, 1912.	Oct. 31, 1912.	2	86.5	Nov. 15, 1912.
James E. Ward.	Lineman	1,100 00 per annum.	Oct. 25, 1912.	Oct. 31, 1912.	6	73.5	Dec. 5, 1912.
Hamilton E. Ford.	Operator	1,200 00 per annum.	Mar. 1, 1912.	April 12, 1912.	2	87.13	April 23, 1912.

Electrical Bureau—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Samuel M. Smith	Pumpman	\$3 00 per day	Oct. 29, 1912	Dec. 5, 1912	1	\$2.8	Dec. 9, 1912.
Clarence B. Davies	Stenographer and Typewriter	3 00 per day	July 17, 1912	Aug. 14, 1912	5	\$3.25	Nov. 22, 1912.
Edward J. Huston	Stenographer and Typewriter	1,200 00 per annum	July 17, 1912	Aug. 14, 1912	4	70.	Aug. 15, 1912.
Robert W. Betts	Wireman	1,000 00 per annum	Mar. 7, 1912	May 16, 1912	6	\$3.4	Aug. 15, 1912.
George Gruber	Wireman	1,000 00 per annum	Mar. 7, 1912	May 16, 1912	3	\$5.4	July 11, 1912.
Harry W. Moser	Wireman	1,000 00 per annum	Mar. 7, 1912	May 16, 1912	1	\$1.64	June 13, 1912.
John A. Vay	Wireman	1,000 00 per annum	Mar. 7, 1912	May 16, 1912	4	\$2.54	July 16, 1912.

BUREAU OF CITY PROPERTY.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Charles L. Munyon	Bricklayer's Helper	\$2 00 per day	Mar. 13, 1912	April 29, 1912	1	\$8.56	June 13, 1912.
John F. Hilsley	Carpenter	3 60 per day	May 31, 1911	Aug. 7, 1911	13	\$7.4	May 16, 1912.
Thomas Lawton	Carpenter	3 60 per day	May 31, 1911	Aug. 7, 1911	13	\$6.78	June 21, 1912.
John F. McGill	Carpenter	3 60 per day	May 31, 1911	Aug. 7, 1911	14	\$7.22	May 16, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Michael J. Dolan, Jr.	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	62	73.55	July 17, 1912.
Joseph J. Elieser	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	1	91.15	Dec. 5, 1912.
William H. Feeney	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	8	84.25	April 24, 1912.
William J. Ferguson	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	34	77.85	June 18, 1912.
Charles J. Fisher	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	11	80.75	Dec. 5, 1912.
Joseph A. Flender	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	69	72.25	July 29, 1912.
Joseph F. Ford	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	20	81.3	April 24, 1912.
Adolf R. Fulst	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	32	77.85	June 18, 1912.
Harry T. Gaul, Jr.	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	15	81.75	April 24, 1912.
Herbert Gunn	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	7	82.15	Dec. 5, 1912.
Walter G. Headley	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	74	71.65	Sept. 28, 1912.
Matthew G. Hemphill	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	36	77.5	June 18, 1912.
John Hilterty	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	37	77.5	June 18, 1912.
John J. Hobson	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	48	76.4	June 18, 1912.
Frank J. Hochmuth	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	15	77.45	Dec. 5, 1912.
John A. Hughes	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	57	74.25	July 17, 1912.
George Louis Hutt	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	19	75.75	Dec. 5, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William Kramer	Hoseman	\$900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	23	81.	April 24, 1912.
John G. Lambert	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	12	83.25	April 24, 1912.
George Lanigan	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	72	72.15	Sept. 28, 1912.
James H. Lawn	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	76	71.5	Oct. 23, 1912.
Frank F. Layer	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	5	85.25	April 24, 1912.
Daniel A. Lindsay	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	23	80.8	April 24, 1912.
Harry D. Lindsay	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	10	81.05	Dec. 5, 1912.
Joseph W. Lindsay	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	8	86.65	April 24, 1912.
Max P. Lorz	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	8	82.1	Dec. 5, 1912.
Michael L. Lucey	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	2	87.7	April 24, 1912.
James J. McCusker	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	50	76.15	June 18, 1912.
Edward MacElroy	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	17	76.6	Dec. 5, 1912.
Joseph A. McGlone	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	58	74.15	July 17, 1912.
Nathan P. Markel	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	5	85.	Dec. 5, 1912.
Walter B. Mathews	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	26	79.7	April 24, 1912.
John P. Matthews	Hoseman	900 00 per annum.	Oct. 26, 1912.	Nov. 4, 1912.	2	86.5	Dec. 5, 1912.
Ralph C. May	Hoseman	900 00 per annum.	Feb. 19, 1912.	Mar. 16, 1912.	51	75.9	June 18, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Edward H. Mengert.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	24	80.5	April 24, 1912.
Harry B. Meyer.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	18	81.7	April 24, 1912.
Faber B. Miller.....	Hoseman	\$900 00 per annum.....	Oct. 26, 1912.....	Nov. 4, 1912.....	22	71.55	Dec. 5, 1912.
Edwin S. Moore.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	68	72.35	July 29, 1912.
William M. Moore.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	56	74.7	July 17, 1912.
John E. Moran.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	67	72.4	July 29, 1912.
Charles Moritz.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	18	81.4	April 24, 1912.
John I. Murphy.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	73	71.9	Sept. 28, 1912.
Joseph L. Murtaugh.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	79	70.7	Oct. 23, 1912.
Jerry Ogden.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	11	88.3	April 24, 1912.
William T. Perry.....	Hoseman	\$900 00 per annum.....	Oct. 26, 1912.....	Nov. 4, 1912.....	13	79.15	Dec. 5, 1912.
George W. Richards.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	59	74.15	July 29, 1912.
George H. Riggs.....	Hoseman	\$900 00 per annum.....	Oct. 26, 1912.....	Nov. 4, 1912.....	20	74.8	Dec. 5, 1912.
Adolph P. Scheerbaum.....	Hoseman	\$900 00 per annum.....	Oct. 26, 1912.....	Nov. 4, 1912.....	16	77.25	Dec. 5, 1912.
Frederick Schoen.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	29	78.9	April 24, 1912.
William M. Showaker.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	28	78.9	April 24, 1912.
Frederick V. Siegel.....	Hoseman	\$900 00 per annum.....	Feb. 19, 1912.....	Mar. 16, 1912.....	42	76.6	June 18, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William G. Simpson.....	Hoseman	\$900 00 per annum..	Oct. 26, 1912.....	Nov. 4, 1912.....	3	87.85	Dec. 5, 1912.
Francis A. Smith.....	Hoseman	900 00 per annum..	Feb. 19, 1912.....	Mar. 16, 1912.....	19	81.35	April 24, 1912.
Edward E. Sprangers.....	Hoseman	900 00 per annum..	Oct. 26, 1912.....	Nov. 4, 1912.....	3	87.4	Dec. 5, 1912.
Howard G. Stevens.....	Hoseman	900 00 per annum..	Feb. 19, 1912.....	Mar. 16, 1912.....	43	76.55	June 18, 1912.
Norman O. Struse.....	Hoseman	900 00 per annum..	Feb. 19, 1912.....	Mar. 16, 1912.....	70	72.3	Sept. 23, 1912.
John J. Sweetney.....	Hoseman	900 00 per annum..	Feb. 19, 1912.....	Mar. 16, 1912.....	14	82.45	April 24, 1912.
George V. Thomas.....	Hoseman	900 00 per annum..	Feb. 19, 1912.....	Mar. 16, 1912.....	9	84.35	April 24, 1912.
Joseph Van Sciver.....	Hoseman	900 00 per annum..	Feb. 19, 1912.....	Mar. 16, 1912.....	4	83.15	April 24, 1912.
Joseph M. Willis.....	Hoseman	900 00 per annum..	Feb. 19, 1912.....	Mar. 16, 1912.....	52	75.55	June 18, 1912.
Walter H. Wohlschlagel.....	Hoseman	900 00 per annum..	Feb. 19, 1912.....	Mar. 16, 1912.....	77	71.4	Oct. 23, 1912.
John Lattimer.....	Inspector, Special, H. P. F. S.	1,000 00 per annum..	Oct. 15, 1912.....	Nov. 22, 1912.....	3	77.	Nov. 27, 1912.
Charles H. Dye.....	Oiler	800 00 per annum..	July 10, 1912.....	July 19, 1912.....	10	91.8	Aug. 23, 1912.
William C. N. Stuart.....	Oiler	800 00 per annum..	April 13, 1911.....	May 4, 1911.....	5	82.6	Feb. 19, 1912.
James Weaver.....	Painter, Wagon.....	1,000 00 per annum..	Oct. 19, 1911.....	Nov. 15, 1911.....	6	84.86	Oct. 29, 1912.
Charles F. Whitelock.....	Painter, Wagon.....	1,000 00 per annum..	Oct. 10, 1911.....	Nov. 15, 1911.....	2	94.13	June 3, 1912.
George L. Harris.....	Plumber	900 00 per annum..	Sept. 9, 1912.....	Sept. 18, 1912.....	9	92.30	Oct. 23, 1912.
J. James Edelman.....	Rodman	720 00 per annum..	Mar. 6, 1912.....	May 6, 1912.....	13	80.2	Oct. 1, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Abraham O. Fisher	Rodman	\$720 00 per annum	Mar. 6, 1912	May 6, 1912	18	70.82	Oct. 14, 1912.
Henry Linker	Rodman	720 00 per annum	Mar. 6, 1912	May 6, 1912	12	82.2	Oct. 9, 1912.
Alfred P. Walls, Jr.	Rodman	720 00 per annum	Mar. 6, 1912	May 6, 1912	17	78.16	Oct. 14, 1912.
James J. McCauley	Stenographer and Typewriter	900 00 per annum	Mar. 22, 1912	April 19, 1912	30	72.34	July 15, 1912.
Samuel B. White	Stenographer and Typewriter	900 00 per annum	Mar. 19, 1912	April 19, 1912	8	88.68	May 1, 1912.
Thomas Reed	Superintendent of Repair Shop	1,800 00 per annum	Mar. 1, 1912	April 12, 1912	1	93.06	April 30, 1912.
George S. Walker	Superintendent of Repair Shop	1,800 00 per annum	Mar. 1, 1912	April 12, 1912	6	78.	May 16, 1912.
Joseph B. Seitzer	Veterinarian	2,000 00 per annum	Sept. 10, 1912	Sept. 28, 1912	2	71.9	Oct. 1, 1912.
Joseph P. Gerety	Veterinarian	1,200 00 per annum	Sept. 10, 1912	Sept. 28, 1912	3	70.2	Oct. 17, 1912.

ELECTRICAL BUREAU.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William J. Farrell	Bricklayer	\$5 00 per day	June 2, 1911	July 17, 1911	2	90.6	Mar. 26, 1912.
Clayton W. Pike	Chief	6,000 00 per annum	July 15, 1912	July 31, 1912	1	88.67	Aug. 1, 1912.
Albert Solms	Clerk	900 00 per annum	Mar. 18, 1912	May 13, 1912	2	92.11	July 19, 1912.
David J. Duffin	Clerk, Index	900 00 per annum	Mar. 18, 1912	May 13, 1912	49	86.87	Oct. 17, 1912.
Walker R. Byers	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	7	87.5	Dec. 21, 1912.
Bernard J. Cassidy, Jr.	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	9	84.1	Dec. 21, 1912.
William J. Christy	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	5	89.	Dec. 21, 1912.
Horace P. Fisher	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	4	89.4	Dec. 21, 1912.
George W. J. Herschoff	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	3	92.2	Dec. 21, 1912.
Robert Kelbaugh	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	1	92.5	Dec. 13, 1912.
Charles W. Packer	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	8	86.5	Dec. 21, 1912.
Charles Steele	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	6	89.	Dec. 21, 1912.
Walter S. Todd	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	2	92.5	Dec. 21, 1912.
James L. Hagy	Draftsman	1,100 00 per annum	Oct. 14, 1912	Nov. 8, 1912	1	87.9	Dec. 21, 1912.
Alexander C. Betus	Dynamoman	1,500 00 per annum	July 16, 1912	July 31, 1912	4	86.8	Aug. 6, 1912.
William Ahles	Elevator Operator	2 75 per day	July 17, 1912	Aug. 17, 1912	2	95.5	Dec. 21, 1912.
John T. Ooulter	Elevator Operator	2 75 per day	July 17, 1912	Aug. 17, 1912	3	90.	Sept. 13, 1912.

Electrical Bureau—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William F. Hawk	Elevator Operator	\$2 75 per day	April 13, 1911	May 10, 1911	18	84.2	May 7, 1912.
Edward L. James	Elevator Operator	2 75 per day	July 17, 1912	Aug. 17, 1912	4	89.9	Aug. 27, 1912.
Samuel G. Minus	Elevator Operator	2 75 per day	April 13, 1911	May 10, 1911	17	85.04	April 12, 1912.
Ernest Mitzner	Elevator Operator	2 75 per day	April 13, 1911	May 10, 1911	16	86.58	April 12, 1912.
James J. O'Shea	Elevator Operator	2 75 per day	July 17, 1912	Aug. 17, 1912	1	95.6	Sept. 6, 1912.
Silas P. Wilkerson	Elevator Operator	2 75 per day	April 13, 1911	May 10, 1911	15	86.6	April 12, 1912.
John C. Bennett	Fireman	2 75 per day	May 26, 1911	July 29, 1911	21	81.78	July 24, 1912.
Frazier Billips	Fireman	2 75 per day	May 26, 1911	July 29, 1911	11	87.8	Jan. 15, 1912.
Stephen K. Boehmer	Fireman	2 75 per day	May 26, 1911	July 29, 1911	12	87.8	Jan. 15, 1912.
Charles Campbell	Fireman	2 75 per day	July 27, 1912	Aug. 6, 1912	18	79.9	Dec. 23, 1912.
Fred. Coyne	Fireman	2 75 per day	May 26, 1911	July 29, 1911	15	84.2	June 20, 1912.
Abraham Donahue	Fireman	2 75 per day	May 26, 1911	July 29, 1911	13	87.54	Jan. 15, 1912.
William Greensmith	Fireman	2 75 per day	May 26, 1911	July 29, 1911	16	82.44	May 16, 1912.
William C. Taylor, Jr.	Fireman	2 75 per day	May 26, 1911	July 29, 1911	19	82.4	June 20, 1912.
James G. Mitchell, Jr.	Lineman	1,100 00 per annum	Oct. 25, 1912	Oct. 31, 1912	2	86.6	Nov. 15, 1912.
James E. Ward	Lineman	1,100 00 per annum	Oct. 25, 1912	Oct. 31, 1912	6	78.5	Dec. 5, 1912.
Hamilton E. Ford	Operator	1,200 00 per annum	Mar. 1, 1912	April 12, 1912	2	87.18	April 26, 1912.

Electrical Bureau—Continued.

Name.	Position.	Salary.	Date of examinations.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Samuel M. Smith.	Pumpman	\$3 00 per day.	Oct. 29, 1912.	Dec. 5, 1912.	1	82.3	Dec. 9, 1912.
Clarence B. Davies.	Stenographer and Typewriter.	3 00 per day.	July 17, 1912.	Aug. 14, 1912.	5	72.35	Nov. 22, 1912.
Edward J. Huston.	Stenographer and Typewriter.	1,200 00 per annum.	July 17, 1912.	Aug. 14, 1912.	4	70.	Aug. 15, 1912.
Robert W. Betts.	Wireman	1,000 00 per annum.	Mar. 7, 1912.	May 16, 1912.	6	82.4	Aug. 15, 1912.
George Gruber.	Wireman	1,000 00 per annum.	Mar. 7, 1912.	May 16, 1912.	3	85.4	July 11, 1912.
Harry W. Moser.	Wireman	1,000 00 per annum.	Mar. 7, 1912.	May 16, 1912.	1	81.64	June 18, 1912.
John A. Vay.	Wireman	1,000 00 per annum.	Mar. 7, 1912.	May 16, 1912.	4	82.54	July 16, 1912.

BUREAU OF CITY PROPERTY.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Charles L. Munyon.	Bricklayer's Helper.	\$2 00 per day.	Mar. 13, 1912.	April 29, 1912.	1	83.56	June 12, 1912.
John F. Hilday.	Carpenter	3 40 per day.	May 31, 1911.	Aug. 7, 1911.	13	87.4	May 16, 1912.
Thomas Lawton.	Carpenter	3 60 per day.	May 31, 1911.	Aug. 7, 1911.	18	85.78	June 21, 1912.
John F. McGill.	Carpenter	3 60 per day.	May 31, 1911.	Aug. 7, 1911.	14	87.22	May 16, 1912.

Bureau of City Property—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Joseph W. Roberts	Carpenter	\$3 60 per day	May 31, 1911	Aug. 7, 1911	1	94.13	May 16, 1912.
David W. Rowlands	Carpenter	3 60 per day	May 31, 1911	Aug. 7, 1911	11	87.9	May 16, 1912.
George A. Sanders	Carpenter	3 60 per day	May 31, 1911	Aug. 7, 1911	12	87.4	May 16, 1912.
Philip A. Waldron	Carpenter	3 60 per day	May 31, 1911	Aug. 7, 1911	17	86.7	June 27, 1912.
Stonewall J. Austin	Cleaner	2 00 per day	July 20, 1912	Aug. 20, 1912	5	97.5	Sept. 26, 1912.
Jacob H. Ferber	Cleaner	2 00 per day	July 20, 1912	Aug. 20, 1912	7	95.	Oct. 1, 1912.
Charles L. Horn	Cleaner	2 00 per day	July 20, 1912	Aug. 20, 1912	9	95.	Oct. 1, 1912.
William Nolan	Cleaner	2 00 per day	July 20, 1912	Aug. 20, 1912	10	95.	Oct. 1, 1912.
Thomas T. Wiercraft	Cleaner	2 00 per day	July 20, 1912	Aug. 20, 1912	8	95.	Oct. 1, 1912.
Bartholomew E. Grady	Clerk	1,000 00 per annum	Mar. 10, 1912	May 13, 1912	18	89.5	Dec. 13, 1912.
Ernest G. Oswald	Court Janitor	720 00 per annum	Feb. 28, 1912	April 16, 1912	1	98.7	May 16, 1912.
James McGarry	Guard, Independence Hall	720 00 per annum	Feb. 28, 1912	April 16, 1912	5	97.80	May 22, 1912.
Francis J. Devine	Guide	3 00 per day	Mar. 5, 1912	April 23, 1912	1	95.65	May 7, 1912.
Annie L. Jacobs	Janitress	25 00 per month	Mar. 12, 1912	April 17, 1912	2	97.66	June 7, 1912.
William F. Hays	Lavatory Attendant	2 00 per day	July 20, 1912	Aug. 20, 1912	3	91.	Aug. 30, 1912.
Edward Reimel	Lavatory Attendant	2 00 per day	July 20, 1912	Aug. 20, 1912	2	92.	Aug. 30, 1912.
George H. Seymour	Lavatory Attendant	2 00 per day	July 20, 1912	Aug. 20, 1912	6	85.	Sept. 11, 1912.

Bureau of City Property—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Daniel G. Toal.....	Lavatory Attendant.....	\$2 00 per day.....	July 20, 1912.....	Aug. 20, 1912.....	1	95.	Aug. 30, 1912.
James Knox	Plumber	3 50 per day.....	Sept. 9, 1912.....	Sept. 18, 1912.....	7	94.	Oct. 22, 1912.
James S. Burns.....	Receiver	3 00 per day.....	Nov. 2, 1911.....	Dec. 5, 1911.....	4	92.4	Jan. 1, 1912.
Patrick J. Meere.....	Rigger	3 50 per day.....	July 5, 1912.....	July 18, 1912.....	2	89.4	July 24, 1912.
George Gorman	Sweeper and Cleaner.....	2 00 per day.....	July 20, 1912.....	Aug. 20, 1912.....	6	96.	Oct. 1, 1912.
Nathaniel M. Griggs.....	Sweeper and Cleaner.....	2 00 per day.....	July 20, 1912.....	Aug. 20, 1912.....	1	100.	Sept. 6, 1912.
George W. Elliott.....	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	6	83.7	Aug. 26, 1912.
John M. Gilmour.....	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	3	85.9	Aug. 26, 1912.
John V. Kinsley.....	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	4	84.5	Aug. 26, 1912.
Angelo Mauri	Superintendent Public Baths.....	600 00 per annum.....	June 2, 1911.....	July 17, 1911.....	2	72.2	April 17, 1912.
Albert Sarbrey	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	5	84.	Aug. 26, 1912.
Charles Strebb	Superintendent Public Baths.....	600 00 per annum.....	June 2, 1911.....	July 17, 1911.....	4	71.8	Mar. 23, 1912.
George M. Stroblein.....	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	1	88.	Aug. 26, 1912.
Bradford A. Tallmage.....	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	2	85.9	Aug. 26, 1912.
John S. Dove, Jr.....	Superintendent Real Estate.....	1,500 00 per annum.....	July 24, 1912.....	Aug. 17, 1912.....	1	84.6	Sept. 21, 1912.
William S. Bowen.....	Superintendent, Asst., City Hall.....	2,000 00 per annum.....	July 29, 1912.....	Aug. 20, 1912.....	1	83.6	Sept. 23, 1912.
Alexander J. Boyd, Jr.....	Superintendent of Square.....	800 00 per annum.....	Oct. 10, 1911.....	Nov. 15, 1911.....	16	79.8	May 16, 1912.

Bureau of Fire—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Abraham O. Fisher.	Rodman	\$720 00 per annum.	Mar. 6, 1912.	May 6, 1912.	18	70.32	Oct. 14, 1912.
Henry Linker	Rodman	720 00 per annum.	Mar. 6, 1912.	May 6, 1912.	12	82.2	Oct. 9, 1912.
Alfred P. Walls, Jr.	Rodman	720 00 per annum.	Mar. 6, 1912.	May 6, 1912.	17	73.16	Oct. 14, 1912.
James J. McCauley.	Stenographer and Typewriter	900 00 per annum.	Mar. 22, 1912.	April 19, 1912.	30	72.34	July 15, 1912.
Samuel B. White.	Stenographer and Typewriter	900 00 per annum.	Mar. 19, 1912.	April 19, 1912.	8	86.66	May 1, 1912.
Thomas Reed	Superintendent of Repair Shop.	1,800 00 per annum.	Mar. 1, 1912.	April 12, 1912.	1	86.66	April 30, 1912.
George S. Walker.	Superintendent of Repair Shop.	1,800 00 per annum.	Mar. 1, 1912.	April 12, 1912.	6	78.	May 16, 1912.
Joseph B. Seltzer.	Veterinarian	2,000 00 per annum.	Sept. 10, 1912.	Sept. 28, 1912.	2	71.9	Oct. 1, 1912.
Joseph P. Gerety.	Veterinarian	1,200 00 per annum.	Sept. 10, 1912.	Sept. 28, 1912.	3	70.2	Oct. 17, 1912.

ELECTRICAL BUREAU.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William J. Farrell	Bricklayer	\$5 00 per day	June 2, 1911	July 17, 1911	2	90.6	Mar. 26, 1912.
Clayton W. Pike	Chief	6,000 00 per annum	July 16, 1912	July 31, 1912	1	88.67	Aug. 1, 1912.
Albert Solms	Clerk	900 00 per annum	Mar. 18, 1912	May 18, 1912	2	92.11	July 19, 1912.
David J. Duffin	Clerk, Index	900 00 per annum	Mar. 18, 1912	May 18, 1912	49	86.87	Oct. 17, 1912.
Walker B. Byers	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	7	87.5	Dec. 21, 1912.
Bernard J. Cassady, Jr.	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	9	84.1	Dec. 21, 1912.
William J. Christy	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	5	89.	Dec. 21, 1912.
Horace P. Fisher	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	4	89.4	Dec. 21, 1912.
George W. J. Herrschoff	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	3	92.2	Dec. 21, 1912.
Robert Kelbaugh	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	1	92.5	Dec. 18, 1912.
Charles W. Packer	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	8	86.5	Dec. 21, 1912.
Charles Steele	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	6	89.	Dec. 21, 1912.
Walker S. Todd	Climber	3 00 per day	Dec. 7, 1912	Dec. 10, 1912	2	92.5	Dec. 21, 1912.
James L. Hagy	Draftsman	1,100 00 per annum	Oct. 14, 1912	Nov. 8, 1912	1	87.9	Dec. 21, 1912.
Alexander O. Betus	Dynamoman	1,200 00 per annum	July 16, 1912	July 31, 1912	4	86.8	Aug. 6, 1912.
William Ables	Elevator Operator	2 75 per day	July 17, 1912	Aug. 17, 1912	2	95.5	Dec. 21, 1912.
John T. Coulter	Elevator Operator	2 75 per day	July 17, 1912	Aug. 17, 1912	3	90.	Sept. 18, 1912.

Electrical Bureau—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William F. Hawk	Elevator Operator	\$2 75 per day	April 13, 1911	May 10, 1911	18	84.2	May 7, 1912.
Edward L. James	Elevator Operator	2 75 per day	July 17, 1912	Aug. 17, 1912	4	89.9	Aug. 27, 1912.
Samuel G. Minus	Elevator Operator	2 75 per day	April 13, 1911	May 10, 1911	17	85.04	April 12, 1912.
Ernest Mitner	Elevator Operator	2 75 per day	April 13, 1911	May 10, 1911	16	86.86	April 12, 1912.
James J. O'Shea	Elevator Operator	2 75 per day	July 17, 1912	Aug. 17, 1912	1	95.6	Sept. 6, 1912.
Silas P. Wilkerson	Elevator Operator	2 75 per day	April 13, 1911	May 10, 1911	15	86.6	April 12, 1912.
John C. Bennett	Fireman	2 75 per day	May 26, 1911	July 29, 1911	21	81.78	July 24, 1912.
Frazier Billips	Fireman	2 75 per day	May 26, 1911	July 29, 1911	11	87.8	Jan. 15, 1912.
Stephen K. Boehmer	Fireman	2 75 per day	May 26, 1911	July 29, 1911	12	87.8	Jan. 15, 1912.
Charles Campbell	Fireman	2 75 per day	July 27, 1912	Aug. 6, 1912	18	79.9	Dec. 23, 1912.
Fred. Coyne	Fireman	2 75 per day	May 26, 1911	July 29, 1911	15	84.2	June 20, 1912.
Abraham Donahue	Fireman	2 75 per day	May 26, 1911	July 29, 1911	13	87.54	Jan. 15, 1912.
William Greensmith	Fireman	2 75 per day	May 26, 1911	July 29, 1911	16	82.44	May 16, 1912.
William C. Taylor, Jr.	Fireman	2 75 per day	May 26, 1911	July 29, 1911	18	82.4	June 20, 1912.
James G. Mitchell, Jr.	Lineman	1,100 00 per annum.	Oct. 25, 1912	Oct. 31, 1912	2	86.6	Nov. 15, 1912.
James E. Ward	Lineman	1,100 00 per annum.	Oct. 25, 1912	Oct. 31, 1912	6	78.5	Dec. 5, 1912.
Hamilton E. Ford	Operator	1,200 00 per annum.	Mar. 1, 1912	April 12, 1912	3	87.18	April 26, 1912.

Electrical Bureau—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Samuel M. Smith.....	Pumpman.....	\$3 00 per day.....	Oct. 29, 1912.....	Dec. 5, 1912.....	1	92.8	Dec. 9, 1912.
Clarence B. Davies.....	Stenographer and Typewriter.....	3 00 per day.....	July 17, 1912.....	Aug. 14, 1912.....	5	73.85	Nov. 22, 1912.
Edward J. Huston.....	Stenographer and Typewriter.....	1,200 00 per annum.....	July 17, 1912.....	Aug. 14, 1912.....	4	79.	Aug. 15, 1912.
Robert W. Betts.....	Wireman.....	1,000 00 per annum.....	Mar. 7, 1912.....	May 16, 1912.....	6	73.4	Aug. 15, 1912.
George Gruber.....	Wireman.....	1,000 00 per annum.....	Mar. 7, 1912.....	May 16, 1912.....	3	85.4	July 11, 1912.
Harry W. Moser.....	Wireman.....	1,000 00 per annum.....	Mar. 7, 1912.....	May 16, 1912.....	1	91.64	June 18, 1912.
John A. Vay.....	Wireman.....	1,000 00 per annum.....	Mar. 7, 1912.....	May 16, 1912.....	4	92.54	July 16, 1912.

BUREAU OF CITY PROPERTY.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Charles L. Munyon.....	Bricklayer's Helper.....	\$2 00 per day.....	Mar. 13, 1912.....	April 29, 1912.....	1	88.56	June 12, 1912.
John F. Hulseley.....	Carpenter.....	3 60 per day.....	May 31, 1911.....	Aug. 7, 1911.....	13	87.4	May 16, 1912.
Thomas Lawton.....	Carpenter.....	3 60 per day.....	May 31, 1911.....	Aug. 7, 1911.....	18	85.78	June 21, 1912.
John F. McGill.....	Carpenter.....	3 60 per day.....	May 31, 1911.....	Aug. 7, 1911.....	14	87.22	May 16, 1912.

Bureau of City Property—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Joseph W. Roberts	Carpenter	\$3 60 per day	May 31, 1911	Aug. 7, 1911	1	94.18	May 16, 1912.
David W. Bowlands	Carpenter	3 60 per day	May 31, 1911	Aug. 7, 1911	11	87.9	May 16, 1912.
George A. Sanders	Carpenter	3 60 per day	May 31, 1911	Aug. 7, 1911	12	87.4	May 16, 1912.
Philip A. Waldron	Carpenter	3 60 per day	May 31, 1911	Aug. 7, 1911	17	86.7	June 27, 1912.
Stonewall J. Austin	Cleaner	2 00 per day	July 20, 1912	Aug. 20, 1912	5	97.5	Sept. 26, 1912.
Jacob H. Ferber	Cleaner	2 00 per day	July 20, 1912	Aug. 20, 1912	7	95.	Oct. 1, 1912.
Charles L. Horn	Cleaner	2 00 per day	July 20, 1912	Aug. 20, 1912	9	95.	Oct. 1, 1912.
William Nolan	Cleaner	2 00 per day	July 20, 1912	Aug. 20, 1912	10	95.	Oct. 1, 1912.
Thomas T. Wicraft	Cleaner	2 00 per day	July 20, 1912	Aug. 20, 1912	8	95.	Oct. 1, 1912.
Bartholomew E. Grady	Clerk	1,000 00 per annum	Mar. 19, 1912	May 13, 1912	18	89.5	Dec. 13, 1912.
Ernest G. Oswald	Court Janitor	720 00 per annum	Feb. 28, 1912	April 16, 1912	1	98.7	May 16, 1912.
James McGarry	Guard, Independence Hall	720 00 per annum	Feb. 28, 1912	April 16, 1912	5	97.80	May 22, 1912.
Francis J. Devine	Guide	3 00 per day	Mar. 5, 1912	April 23, 1912	1	95.65	May 7, 1912.
Annie L. Jacobs	Janitress	25 00 per month	Mar. 12, 1912	April 17, 1912	3	97.66	June 7, 1912.
William F. Hays	Lavatory Attendant	2 00 per day	July 20, 1912	Aug. 20, 1912	3	91.	Aug. 30, 1912.
Edward Reimel	Lavatory Attendant	2 00 per day	July 20, 1912	Aug. 20, 1912	2	92.	Aug. 30, 1912.
George H. Seymour	Lavatory Attendant	2 00 per day	July 20, 1912	Aug. 20, 1912	6	85.	Sept. 11, 1912.

Bureau of City Property—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Daniel G. Toal.....	Lavatory Attendant.....	\$2 00 per day.....	July 20, 1912.....	Aug. 20, 1912.....	1	95.	Aug. 20, 1912.
James Knox	Plumber	3 50 per day.....	Sept. 9, 1912.....	Sept. 18, 1912.....	7	94.	Oct. 22, 1912.
James S. Burns.....	Receiver	3 00 per day.....	Nov. 2, 1911.....	Dec. 5, 1911.....	4	92.4	Jan. 1, 1912.
Patrick J. Meere.....	Rigger	3 50 per day.....	July 5, 1912.....	July 18, 1912.....	2	89.4	July 24, 1912.
George Gorman	Sweeper and Cleaner.....	2 00 per day.....	July 20, 1912.....	Aug. 20, 1912.....	6	96.	Oct. 1, 1912.
Nathaniel M. Griggs.....	Sweeper and Cleaner.....	2 00 per day.....	July 20, 1912.....	Aug. 20, 1912.....	1	100.	Sept. 6, 1912.
George W. Elliott.....	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	6	88.7	Aug. 26, 1912.
John M. Gilmour.....	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	3	85.9	Aug. 26, 1912.
John V. Kinsley.....	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	4	84.5	Aug. 26, 1912.
Angelo Mauri	Superintendent Public Baths.....	600 00 per annum.....	June 2, 1911.....	July 17, 1911.....	2	73.2	April 17, 1912.
Albert Sarbrey	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	5	84.	Aug. 26, 1912.
Charles Strebb	Superintendent Public Baths.....	600 00 per annum.....	June 2, 1911.....	July 17, 1911.....	4	71.8	Mar. 23, 1912.
George M. Stroblein.....	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	1	88.	Aug. 26, 1912.
Bradford A. Tallmage.....	Superintendent Public Baths.....	600 00 per annum.....	July 30, 1912.....	Aug. 14, 1912.....	2	85.9	Aug. 26, 1912.
John S. Dove, Jr.....	Superintendent Real Estate.....	1,500 00 per annum.....	July 24, 1912.....	Aug. 17, 1912.....	1	84.6	Sept. 21, 1912.
William S. Bowen.....	Superintendent, Ast., City Hall.....	2,000 00 per annum.....	July 29, 1912.....	Aug. 20, 1912.....	1	83.6	Sept. 23, 1912.
Alexander J. Boyd, Jr.....	Superintendent of Square.....	800 00 per annum.....	Oct. 10, 1911.....	Nov. 15, 1911.....	16	79.8	May 16, 1912.

Bureau of City Property—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Joseph W. Carmichael.....	Superintendent of Square.....	\$600 00 per annum.....	Oct. 10, 1911.....	Nov. 15, 1911.....	21	77.4	July 29, 1912.
Samuel E. Creely.....	Superintendent of Square.....	800 00 per annum.....	Oct. 10, 1911.....	Nov. 15, 1911.....	22	77.2	Nov. 9, 1912.
John B. Doherty.....	Superintendent of Square.....	800 00 per annum.....	Oct. 10, 1911.....	Nov. 15, 1911.....	29	74.83	Nov. 9, 1912.
David M. O'Shea.....	Superintendent of Square.....	630 00 per annum.....	Oct. 10, 1911.....	Nov. 15, 1911.....	15	79.88	June 17, 1912.
Edward Torrence.....	Superintendent of Square.....	800 00 per annum.....	Oct. 10, 1911.....	Nov. 15, 1911.....	19	76.16	May 16, 1912.
John F. Wade.....	Superintendent of Square.....	800 00 per annum.....	Oct. 10, 1911.....	Nov. 15, 1911.....	18	79.68	Nov. 9, 1912.
Emil Wilhelm.....	Superintendent of Square.....	800 00 per annum.....	Oct. 10, 1911.....	Nov. 15, 1911.....	24	76.8	Nov. 9, 1912.
John Williams.....	Superintendent of Square.....	600 00 per annum.....	Oct. 10, 1911.....	Nov. 15, 1911.....	26	75.8	Nov. 9, 1912.

BUREAU OF BOILER INSPECTION.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
John Hagarty, Jr.....	Inspector, Smoke.....	\$1,200 00 per annum.....	Oct. 15, 1912.....	Oct. 31, 1912.....	5	75.8	Dec. 2, 1912.
Francis Wm. Koppenberg.....	Messenger.....	800 00 per annum.....	Feb. 27, 1912.....	April 16, 1912.....	21	94.9	Nov. 27, 1912.

BUREAU OF CORRECTION.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Frank Ramsbacher	Baker	\$400 00 per annum	Dec. 18, 1912	Dec. 20, 1912	1	85.	Dec. 23, 1912.
Howard B. Arrison	Bookkeeper, Second Assistant	720 00 per annum	July 19, 1912	Aug. 1, 1912	3	92.2	Oct. 3, 1912.
Albert Benneoff	Guard	2 25 per day	July 6, 1912	July 15, 1912	8	85.5	Aug. 6, 1912.
Frederick L. Losch	Guard	2 00 per day	July 6, 1912	July 15, 1912	9	84.5	Oct. 9, 1912.
James A. McColgan	Guard	2 25 per day	July 6, 1912	July 15, 1912	6	86.1	Aug. 6, 1912.
George D. Miller	Guard	2 25 per day	July 6, 1912	July 15, 1912	1	90.5	Aug. 6, 1912.
John Millett	Guard	2 25 per day	July 6, 1912	July 15, 1912	2	89.	Aug. 6, 1912.
Frederick F. Page	Guard	2 00 per day	May 31, 1911	July 1, 1911	4	76.8	April 24, 1912.
John Russel Page	Guard	2 25 per day	July 6, 1912	July 15, 1912	5	86.4	Aug. 6, 1912.
William H. Urian	Guard	2 00 per day	May 31, 1911	July 1, 1911	8	71.2	April 24, 1912.
Edward S. Zolner	Guard	2 00 per day	July 6, 1912	July 15, 1912	7	85.8	Dec. 21, 1912.
Kathrine C. Froel	Matron, Assistant	360 00 per annum	July 23, 1912	July 31, 1912	4	87.	Sept. 12, 1912.
Anna M. Grant	Matron, Assistant	360 00 per annum	July 23, 1912	July 31, 1912	9	84.	Sept. 12, 1912.
Mary C. Moore	Matron, Assistant	360 00 per annum	July 23, 1912	July 31, 1912	3	89.	Aug. 9, 1912.

BUREAU OF BUILDING INSPECTION.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Joseph R. Summers	Building Inspector (Bricklayer)	\$2,000 00 per annum.	April 7, 1911	June 13, 1911	3	81.94	Jan. 23, 1912.
George M. Carville	Building Inspector (Carpenter)	2,000 03 per annum.	July 8, 1912	July 29, 1912	4	88.5	Aug. 24, 1912.
Walter E. Roop	Building Inspector (Carpenter)	2,000 03 per annum.	April 7, 1911	June 13, 1911	8	86.2	Feb. 8, 1912.
Joseph A. Simons	Building Inspector (Carpenter)	2,000 03 per annum.	July 8, 1912	July 29, 1912	2	92.	July 31, 1912.
Walter W. Weingartner	Building Inspector (Carpenter)	2,000 03 per annum.	April 7, 1911	June 13, 1911	13	81.	Jan. 12, 1912.
Charles A. Flanagan	Building Inspector (Civil Engineer)	2,000 00 per annum.	April 7, 1911	June 13, 1911	1	72.66	Jan. 23, 1912.
Leopold Glick	Stenographer and Clerk	900 00 per annum.	Mar. 22, 1912	April 19, 1912	23	81.87	July 12, 1912.

BUREAU OF ELEVATOR INSPECTION.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Alexander Outhill	Clerk	\$1,100 00 per annum.	Mar. 19, 1912	May 13, 1912	16	89.96	Sept. 23, 1912.
John G. Rosengarten	Clerk	1,000 00 per annum.	Mar. 19, 1912	May 13, 1912	12	90.2	June 1, 1912.
James Ryan	Clerk	1,000 00 per annum.	Mar. 19, 1912	May 13, 1912	17	89.70	Sept. 25, 1912.
John B. Wolter	Inspector, Chief	3,500 00 per annum.	July 18, 1912	Aug. 10, 1912	1	91.5	Aug. 13, 1912.
Edward C. Balzley	Inspector, District	1,000 00 per annum.	July 5, 1912	July 19, 1912	4	78.5	July 25, 1912.
Nicholas G. Dyck	Inspector, District	1,000 00 per annum.	July 5, 1912	July 19, 1912	3	79.12	July 25, 1912.
Joseph Hunter	Inspector, District	1,000 00 per annum.	June 6, 1911	July 29, 1911	2	80.36	July 25, 1912.
Walter Reber	Inspector, District	1,000 00 per annum.	July 5, 1912	July 19, 1912	5	74.42	July 25, 1912.
James K. Helms	Inspector, Elevator	1,200 00 per annum.	July 5, 1912	July 19, 1912	1	87.98	July 25, 1912.
Howard D. Mollston	Messenger	700 00 per annum.	Feb. 28, 1912	April 16, 1912	17	95.5	Oct. 1, 1912.

DEPARTMENT OF PUBLIC WORKS.

DIRECTOR'S OFFICE.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Harry E. Mock	Blueprinter	\$600 00 per annum	Oct. 16, 1912	Oct. 29, 1912	3	81.	Nov. 1, 1912.
John A. Markley	Chauffeur	1,000 00 per annum	Feb. 26, 1912	April 3, 1912	9	71.55	July 5, 1912.
Herman Hornig	Entomologist	1,500 00 per annum	Sept. 28, 1912	Oct. 22, 1912	1	83.2	Oct. 23, 1912.
Frank E. Morthime	Special Inspector	2,500 00 per annum	Mar. 8, 1912	Mar. 29, 1912	1	86.6	April 1, 1912.
Louis S. Carfagno	Telephone Operator	480 00 per annum	Sept. 27, 1912	Oct. 25, 1912	6	81.52	Oct. 29, 1912.
Thomas J. Moore	Office Boy	360 00 per annum	Oct. 9, 1912	Oct. 30, 1912	2	92.1	Nov. 11, 1912.
Rose M. Cassidy	Stenographer	3 00 per day	Mar. 22, 1912	April 19, 1912	25	82.22	Oct. 24, 1912.
John J. Harkins	Stenographer and Typewriter	900 00 per annum	Mar. 22, 1912	April 19, 1912	12	87.31	May 9, 1912.
Maud Sharpless	Stenographer and Typewriter	1,100 00 per annum	Mar. 25, 1912	April 19, 1912	2	95.02	May 15, 1912.
Claire Natalie Vincent	Stenographer	900 00 per annum	Mar. 22, 1912	April 19, 1912	19	86.48	Aug. 8, 1912.

BUREAU OF HIGHWAYS AND STREET CLEANING.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Frederick Bay	Assistant Commissioner	\$2,500 00 per annum.	Feb. 23, 1912	Mar. 20, 1912	6	78.15	April 1, 1912.
Robert E. Carney	Assistant Commissioner	2,500 00 per annum.	Feb. 23, 1912	Mar. 20, 1912	14	72.6	April 26, 1912.
Walter D. Garnet	Assistant Commissioner	2,500 00 per annum.	Feb. 23, 1912	Mar. 20, 1912	13	73.05	May 1, 1912.
Silas G. Griffith	Assistant Commissioner	2,500 00 per annum.	Feb. 23, 1912	Mar. 20, 1912	8	75.5	April 1, 1912.
Stephen Harris	Assistant Commissioner	2,500 00 per annum.	Feb. 23, 1912	Mar. 20, 1912	10	72.45	April 1, 1912.
Michael J. McCrudden	Assistant Commissioner	2,500 00 per annum.	Feb. 23, 1912	Mar. 20, 1912	3	82.25	Mar. 27, 1912.
John H. Neeson	Assistant Commissioner	2,500 00 per annum.	Feb. 23, 1912	Mar. 20, 1912	2	83.65	Mar. 24, 1912.
William C. Reeder	Assistant Commissioner	2,500 00 per annum.	Feb. 23, 1912	Mar. 20, 1912	1	89.15	Mar. 25, 1912.
Robert Schmitz	Assistant Commissioner	2,500 00 per annum.	Feb. 23, 1912	Mar. 20, 1912	12	73.05	April 24, 1912.
William H. Connell	Chief	6,000 00 per annum.	Mar. 16, 1912	May 6, 1912	1	82.	May 7, 1912.
Frank L. Neall	Chief, Assistant	3,000 00 per annum.	July 31, 1912	Aug. 23, 1912	3	77.50	Aug. 27, 1912.
John G. Pursell	Draftsman	800 00 per annum.	Oct. 5, 1912	Nov. 8, 1912	3	70.1	Dec. 12, 1912.
John J. Dunn	Engineer, Asphalt Roller	3 50 per day	Oct. 21, 1912	Oct. 24, 1912	6	70.5	Nov. 1, 1912.
William F. Gibson	Engineer, Asphalt Roller	3 50 per day	Oct. 21, 1912	Oct. 24, 1912	3	87.95	Nov. 19, 1912.
Harry Green	Engineer, Portable Roller	3 50 per day	Oct. 21, 1912	Oct. 24, 1912	5	86.25	Nov. 1, 1912.
Dominick P. Torpey	Engineer, Portable Roller	3 50 per day	Oct. 21, 1912	Oct. 24, 1912	4	85.85	Nov. 1, 1912.
Frank S. Ward	Foreman Sewer Repairs	1,200 00 per annum.	Nov. 18, 1910	Mar. 9, 1911	2	84.9	Feb. 15, 1912.

Bureau of Highways and Street Cleaning—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William G. Armstrong.....	Foreman Unpd. and Mdm. Sta.....	\$100 00 per month.....	Nov. 2, 1911.....	Nov. 21, 1911.....	1	92.6	April 24, 1912.
William B. Proudfoot.....	Inspector, Sewer Repairs.....	1,300 00 per annum.....	Oct. 4, 1912.....	Oct. 25, 1912.....	4	84.6	Dec. 9, 1912.
John T. Aldrich.....	Inspector, Street Cleaning.....	1,300 00 per annum.....	Feb. 24, 1912.....	May 14, 1912.....	5	89.	June 7, 1912.
Samuel Barakat.....	Inspector, Street Cleaning.....	1,300 00 per annum.....	Feb. 24, 1912.....	May 14, 1912.....	2	92.8	May 20, 1912.
J. Cleveland McCormick.....	Inspector, Street Cleaning.....	1,300 00 per annum.....	Feb. 24, 1912.....	May 14, 1912.....	10	85.6	June 6, 1912.
Walker J. Merry.....	Inspector, Street Cleaning.....	1,300 00 per annum.....	Feb. 24, 1912.....	May 14, 1912.....	9	86.2	June 4, 1912.
Melville A. Loveloy.....	Inspector, Street Cleaning.....	1,300 00 per annum.....	Feb. 24, 1912.....	May 14, 1912.....	3	92.6	May 20, 1912.
William H. Stakeley.....	Inspector, Street Cleaning.....	1,300 00 per annum.....	Feb. 24, 1912.....	May 14, 1912.....	1	95.	May 20, 1912.
John T. Altrich.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	5	80.6	Sept. 10, 1912.
Julian G. Bailey.....	Inspector, Highways.....	1,800 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	60	74.2	Oct. 1, 1912.
Edward S. Banister.....	Inspector, Highways.....	1,800 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	11	90.8	Aug. 17, 1912.
Russell B. Barrett.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	54	75.1	Oct. 7, 1912.
Horace T. Buckius.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	25	82.7	Aug. 26, 1912.
Joseph O. Conely.....	Inspector, Highways.....	1,300 00 per annum.....	Mar. 8, 1911.....	July 25, 1911.....	9	74.	Mar. 19, 1912.
John L. Oostello.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	19	87.4	Aug. 26, 1912.
Howard Lee Danenhauer.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	34	80.2	Sept. 10, 1912.
Alfred B. Egerton.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	52	75.5	Oct. 1, 1912.

Bureau of Highways and Street Cleaning—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Paul J. Essick, Jr.	Inspector, Highways	\$1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	53	76.5	Oct. 7, 1912.
William N. Fish.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	10	91.8	Aug. 17, 1912.
O. Keller Gifford.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	43	76.9	Oct. 1, 1912.
O. H. Godshall.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	21	85.	Aug. 26, 1912.
William C. Greany.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	17	88.	Aug. 26, 1912.
Martin Van Harlingen.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	63	78.	Sept. 27, 1912.
Roger Haydock	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	43	78.2	Sept. 10, 1912.
Charles H. Hill.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	18	87.9	Oct. 1, 1912.
George W. Hiney, Jr.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	22	84.2	Aug. 26, 1912.
John Horridge	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	40	78.5	Sept. 10, 1912.
Edward W. Kelly.	Inspector, Highways	1,300 00 per annum.	Mar. 8, 1911.	July 25, 1911.	7	75.	Mar. 15, 1912.
Frank H. Kochersperger.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	31	80.8	Sept. 10, 1912.
George N. Lytle.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	46	77.1	Sept. 24, 1912.
Thomas S. Martin, 3rd.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	8	91.8	Aug. 17, 1912.
T. Otto Mayer.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	49	76.8	Sept. 27, 1912.
James J. Montgomery.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	45	77.8	Sept. 24, 1912.
John H. Nuttall.	Inspector, Highways	1,300 00 per annum.	June 8, 1912.	Aug. 5, 1912.	9	91.4	Aug. 17, 1912.

Bureau of Highways and Street Cleaning—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Henry V. Osbourn.....	Inspector, Highways.....	\$1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	20	87.	Aug. 26, 1912.
E. Remington Patterson.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	36	79.3	Sept. 10, 1912.
William Publ.....	Inspector, Highways.....	1,300 00 per annum.....	Mar. 8, 1911.....	July 25, 1911.....	8	74.4	Mar. 18, 1912.
John A. Renshaw.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	16	88.6	Oct. 1, 1912.
Elvin S. Rodgers.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	39	81.1	Aug. 26, 1912.
Fred E. Roth.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	53	74.4	Oct. 1, 1912.
Joseph W. Stillman.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	6	96.8	Aug. 17, 1912.
Walter C. Solly.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	41	78.3	Sept. 10, 1912.
John K. Steel.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	65	72.	Oct. 16, 1912.
Albert W. Thorpe.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	14	86.5	Aug. 26, 1912.
Frank Wagner.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	7	92.4	Aug. 17, 1912.
Joseph B. Wagner.....	Inspector, Highways.....	1,300 00 per annum.....	Mar. 8, 1911.....	July 25, 1911.....	11	71.8	Mar. 21, 1912.
Richard A. Wahl.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	15	89.	Aug. 26, 1912.
Henry C. Warnick.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	56	71.8	Oct. 1, 1912.
Charles D. Williams.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	39	78.7	Sept. 10, 1912.
Robert L. Young.....	Inspector, Highways.....	1,300 00 per annum.....	June 8, 1912.....	Aug. 5, 1912.....	28	82.7	Aug. 26, 1912.
Samuel Kleinberg.....	Messenger.....	800 00 per annum.....	Feb. 28, 1912.....	April 16, 1912.....	13	96.20	Nov. 16, 1912.

Bureau of Highways and Street Cleaning—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Emil Rosen	Messenger	\$800 00 per annum	Feb. 28, 1912	April 16, 1912	6	97.	June 7, 1912.
Frank Artimatro	Paver	3 75 per day	June 20, 1912	June 22, 1912	49	77.25	Sept. 6, 1912.
Joseph Baldino	Paver	3 75 per day	June 20, 1912	June 22, 1912	24	89.25	June 25, 1912.
Domenico Cairone	Paver	3 75 per day	June 20, 1912	June 22, 1912	50	76.5	Sept. 6, 1912.
Charles Campbell	Paver	3 75 per day	Aug. 27, 1912	Aug. 31, 1912	7	85.71	Sept. 6, 1912.
Edward Casey	Paver	3 75 per day	June 20, 1912	June 22, 1912	12	93.	June 25, 1912.
Cesare Collemacine	Paver	3 75 per day	June 20, 1912	June 22, 1912	13	96.	June 25, 1912.
Enrico Orognaie	Paver	3 75 per day	June 20, 1912	June 22, 1912	26	89.	June 25, 1912.
Timothy Cummings	Paver	3 75 per day	June 20, 1912	June 22, 1912	43	78.25	Aug. 16, 1912.
Clarence A. Dampman	Paver	3 75 per day	June 20, 1912	June 22, 1912	43	82.50	July 31, 1912.
John C. Dawson	Paver	3 75 per day	June 20, 1912	June 22, 1912	36	85.25	July 3, 1912.
Gabrielle DeMarco	Paver	3 75 per day	June 20, 1912	June 22, 1912	6	94.	June 25, 1912.
James A. Denning	Paver	3 75 per day	June 20, 1912	June 22, 1912	47	79.5	Aug. 16, 1912.
Caroline Di Bona	Paver	3 75 per day	June 20, 1912	June 22, 1912	45	81.	July 31, 1912.
John Dillon	Paver	3 75 per day	June 20, 1912	June 22, 1912	23	89.5	June 25, 1912.
Thomas Duffy	Paver	3 75 per day	June 20, 1912	June 22, 1912	2	95.	June 25, 1912.
John Dwyer	Paver	3 75 per day	June 20, 1912	June 22, 1912	40	84.25	July 19, 1912.

Bureau of Highways and Street Cleaning—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William Eberhardt	Paver	\$8 75 per day	Aug. 27, 1912	Aug. 31, 1912	4	88.57	Sept. 6, 1912.
John Fox	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	46	89.75	July 31, 1912.
Thomas Griffin	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	50	87.5	Sept. 6, 1912.
Abram Jones	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	11	88.	June 25, 1912.
James O. Jones	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	44	81.	July 31, 1912.
Salvatore Juliano	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	1	88.5	June 25, 1912.
John Kane	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	35	85.35	July 3, 1912.
John P. Kelly	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	27	89.	July 3, 1912.
Peter Leone	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	29	86.75	July 3, 1912.
Michael Lyons	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	7	86.75	June 25, 1912.
James J. McAteer	Paver	\$ 75 per day	Aug. 27, 1912	Aug. 31, 1912	8	84.39	Sept. 6, 1912.
Joseph McCartney	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	17	91.5	June 25, 1912.
Henry McCloakey	Paver	\$ 75 per day	Aug. 27, 1912	Aug. 31, 1912	1	97.96	Sept. 6, 1912.
Anthony McDewitt	Paver	\$ 75 per day	Aug. 27, 1912	Aug. 31, 1912	12	70.	Sept. 16, 1912.
Patrick McGinn	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	33	86.25	July 3, 1912.
John McGinty	Paver	\$ 75 per day	Sept. 24, 1912	Sept. 25, 1912	1	76.	Oct. 15, 1912.
Francis McGovern	Paver	\$ 75 per day	June 30, 1912	June 22, 1912	10	93.25	June 25, 1912.

Bureau of Highways and Street Cleaning—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Owen J. McGovern	Paver	\$3.75 per day	June 20, 1912	June 22, 1912	30	86.75	July 8, 1912.
James McIntyre	Paver	3.75 per day	June 20, 1912	June 22, 1912	41	83.75	July 20, 1912.
Edward McManus	Paver	3.75 per day	June 20, 1912	June 22, 1912	20	91.25	June 25, 1912.
Orestenzo Mazola	Paver	3.75 per day	June 20, 1912	June 22, 1912	83	85.	July 19, 1912.
Michele Montemurri	Paver	3.75 per day	June 20, 1912	June 22, 1912	5	94.	June 25, 1912.
Luigi Morrone	Paver	3.75 per day	June 20, 1912	June 22, 1912	34	85.5	July 3, 1912.
Andrew J. Noble	Paver	3.75 per day	June 20, 1912	June 22, 1912	4	94.5	June 25, 1912.
Salvatore Papalanni	Paver	3.75 per day	June 20, 1912	June 22, 1912	3	91.43	Sept. 6, 1912.
Domenick Piselli	Paver	3.75 per day	Aug. 27, 1912	Aug. 31, 1912	37	85.25	July 3, 1912.
Angelo Radano	Paver	3.75 per day	June 20, 1912	June 22, 1912	6	87.14	Sept. 6, 1912.
Frank Reilly	Paver	3.75 per day	Aug. 27, 1912	Aug. 31, 1912	16	92.5	June 25, 1912.
Michael Reilly	Paver	3.75 per day	June 20, 1912	June 22, 1912	14	98.	June 25, 1912.
John J. Rodgers, Jr.	Paver	3.75 per day	June 20, 1912	June 22, 1912	3	95.	June 25, 1912.
Antonio Salced	Paver	3.75 per day	Aug. 27, 1912	Aug. 31, 1912	10	77.14	Sept. 6, 1912.
Sabatino Sammartino	Paver	3.75 per day	June 20, 1912	June 22, 1912	42	83.5	July 25, 1912.
Giuseppe Segreti	Paver	3.75 per day	June 20, 1912	June 22, 1912	13	91.5	June 25, 1912.
Edward T. Sims	Paver	3.75 per day	June 20, 1912	June 22, 1912	21	90.5	June 25, 1912.

Bureau of Highways and Street Cleaning—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Harry E. Thompson.	Paver	\$3 75 per day	June 20, 1912	June 22, 1912	22	90.5	June 25, 1912.
John Tyrrell	Paver	3 75 per day	Aug. 27, 1912	Aug. 31, 1912	2	94.29	Sept. 6, 1912.
Thomas Walsh	Paver	3 75 per day	June 20, 1912	June 22, 1912	9	92.75	June 27, 1912.
John E. G. Williams	Paver	3 75 per day	June 20, 1912	June 22, 1912	38	85.25	July 19, 1912.
Angelo Zucaro	Paver	3 75 per day	June 20, 1912	June 22, 1912	15	92.75	June 25, 1912.
Mrs. Esta D. Hess.	Stenographer and Clerk	900 00 per annum.	Mar. 22, 1912	April 19, 1912	1	94.92	May 1, 1912.
Edna M. Marrer.	Stenographer and Typewriter	720 00 per annum.	Mar. 21, 1912	April 19, 1912	10	85.74	Nov. 11, 1912.
Mary E. Stevens.	Stenographer and Typewriter	720 00 per annum.	Mar. 21, 1912	April 19, 1912	9	87.40	Oct. 2, 1912.
Elwood Hipple	Stonemason	4 00 per day	July 25, 1912	Aug. 2, 1912	4	92.4	Aug. 8, 1912.
James Reynolds	Stonemason	4 00 per day	June 6, 1911	June 22, 1911	3	91.	Mar. 25, 1912.
Clarence Butler	Rammer	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	22	79.5	July 25, 1912.
Charles Camac	Rammer	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	23	81.94	July 19, 1912.
Arthur Oashore	Rammer	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	13	86.93	June 7, 1912.
Michael DePietrantonio	Rammer	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	33	73.84	July 25, 1912.
Dennis Diamond	Rammer	3 25 per day	Aug. 27, 1912	Aug. 28, 1912	3	93.	Sept. 4, 1912.
Donato Di Guglielmo.	Rammer	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	34	76.27	July 25, 1912.
Thomas Donabue	Rammer	3 25 per day	Aug. 27, 1912	Aug. 28, 1912	11	86.	Sept. 16, 1912.

Bureau of Highways and Street Cleaning—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
James Dunn	Ramner	\$3 25 per day	Nov. 3, 1911	Nov. 23, 1911	20	84.72	June 13, 1912.
Luigi Falotico	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	21	84.46	June 28, 1912.
Philip Gearty	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	14	78.	Sept. 16, 1912.
David L. Geddes	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	8	90.	Sept. 6, 1912.
Felix Golden	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	2	98.	Sept. 4, 1912.
John Irvin	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	14	86.91	June 7, 1912.
Luke Kerns	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	15	78.	Sept. 16, 1912.
Edward Lanza	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	31	80.51	July 20, 1912.
Joseph McCartney	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	9	89.	Sept. 6, 1912.
Patrick McGlone	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	5	92.	Sept. 4, 1912.
Charles A. Mellwain	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	13	87.	Sept. 6, 1912.
Patrick McKenna	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	4	94.	Sept. 4, 1912.
Daniel E. McMonagle	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	26	82.86	July 3, 1912.
Edward McQuaid	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	27	82.24	July 19, 1912.
Peter J. Maguire	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	29	81.68	July 20, 1912.
Frank May	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	25	82.84	July 3, 1912.
Michèle Montemurri	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	7	90.	Sept. 6, 1912.

Bureau of Highways and Street Cleaning—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Daniel P. Murphy	Ramner	\$8 25 per day	Nov. 3, 1911	Nov. 23, 1911	18	88.3	June 13, 1912.
George J. Murphy	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	19	84.88	June 13, 1912.
John Murray	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	13	80.	Sept. 16, 1912.
John Nolan	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	1	98.	Sept. 4, 1912.
Giovanni Scoll	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	20	81.	July 30, 1912.
Joseph Scull	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	17	85.51	June 7, 1912.
Frank Smith	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	24	88.56	July 3, 1912.
William D. Thomas	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	12	85.	Sept. 16, 1912.
Marcello Vendura	Ramner	3 25 per day	Aug. 27, 1912	Aug. 23, 1912	6	92.	Sept. 6, 1912.
James A. Walsh	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	23	83.79	July 3, 1912.
Thomas Walsh	Ramner	3 25 per day	Nov. 3, 1911	Nov. 23, 1911	22	84.01	June 25, 1912.

BOARD OF HIGHWAY SUPERVISORS.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Edward Huttger	Draftsman	\$350 00 per annum.	Mar. 7, 1912	May 7, 1912	6	70.76	July 2, 1912.
Walter J. Merry	Draftsman	\$50 00 per annum.	Mar. 7, 1912	May 7, 1912	5	72.23	May 18, 1912.

BUREAU OF LIGHTING.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
George E. Mapes	Chief	\$2,000 00 per annum.	July 11, 1912	Aug. 12, 1912	4	72.5	Aug. 14, 1912.
Edwy. F. McNally	Inspector	1,000 00 per annum.	July 12, 1912	Aug. 12, 1912	1	90.6	Aug. 24, 1912.

BUREAU OF SURVEYS.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Joseph H. Greene.	Apprentice	\$360 00 per annum.	Oct. 9, 1912	Oct. 31, 1912	1	93.3	Nov. 11, 1912.
Andrew O. Schoeller.	Apprentice	360 00 per annum.	Oct. 9, 1912	Oct. 31, 1912	2	89.8	Nov. 7, 1912.
Charles Blacher	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	11	80.1	July 25, 1912.
George A. Dickel.	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	7	83.73	April 10, 1912.
William H. Flood.	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	6	84.38	May 23, 1912.
James A. Flynn.	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	1	91.9	April 15, 1912.
Olenens F. Frieden.	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	12	77.2	Aug. 14, 1912.
Leo F. Garson.	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	13	72.09	Sept. 11, 1912.
George N. Hyland.	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	5	85.5	May 1, 1912.
Robert M. Knable.	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	20	71.7	Nov. 1, 1912.
Henry Linker	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	2	88.83	April 15, 1912.
Brinton McCameron	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	16	72.7	Aug. 20, 1912.
George H. McCaughlin.	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	10	80.13	July 25, 1912.
Joseph A. McCormick.	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	4	87.2	April 15, 1912.
J. Otto Schubert.	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	9	82.7	June 12, 1912.
Powell Stackhouse	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	17	72.2	Aug. 30, 1912.
Joseph A. Whitman.	Chainman	40 00 per month.	Feb. 26, 1912	Mar. 23, 1912	13	77.	Aug. 19, 1912.

Bureau of Surveys—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
John E. Conway	Clerk	\$720 00 per annum.	Mar. 15, 1912.	April 24, 1912.	22	92.08	Aug. 23, 1912.
David J. Duffin	Clerk	720 00 per annum.	Mar. 15, 1912.	April 24, 1912.	8	94.82	Aug. 16, 1912.
Charles J. O'Neill	Clerk	0 40 per hour.	Mar. 18, 1912.	May 13, 1912.	33	87.65	Nov. 6, 1912.
Andrew B. Maine	Clerk	1,260 00 per annum.	Mar. 20, 1912.	April 24, 1912.	9	87.41	June 10, 1912.
James J. Mulvenna	Clerk	750 00 per annum.	Mar. 18, 1912.	May 13, 1912.	51	86.65	Dec. 13, 1912.
Julius Hanigbaum	Custodian of Records.	900 00 per annum.	Mar. 22, 1912.	May 13, 1912.	16	86.83	May 13, 1912.
Edward S. Bannister	Draftsman	1,000 00 per annum.	Mar. 6, 1912.	May 7, 1912.	9	83.94	July 5, 1912.
Russell G. Berryman	Draftsman	1,000 00 per annum.	Mar. 6, 1912.	May 7, 1912.	11	78.8	June 14, 1912.
Harold C. Blackburn	Draftsman	900 00 per annum.	July 22, 1912.	Aug. 17, 1912.	2	89.4	Sept. 10, 1912.
James S. Clay	Draftsman	1,000 00 per annum.	Mar. 6, 1912.	May 7, 1912.	3	88.26	June 14, 1912.
Joseph R. Conroy	Draftsman	0 47 per hour.	Oct. 5, 1912.	Nov. 8, 1912.	1	72.	Nov. 13, 1912.
Irvin M. Cupitt	Draftsman	1,000 00 per annum.	Mar. 6, 1912.	May 7, 1912.	7	86.66	June 14, 1912.
Conrad Engelkraut, Jr.	Draftsman	1,000 00 per annum.	Mar. 6, 1912.	May 7, 1912.	6	86.72	June 14, 1912.
Harry W. Farrant	Draftsman	1,000 00 per annum.	Mar. 6, 1912.	May 7, 1912.	2	88.14	May 13, 1912.
Herman W. Galling, Jr.	Draftsman	900 00 per annum.	Mar. 6, 1912.	May 7, 1912.	4	86.52	June 14, 1912.
Samuel Golder	Draftsman	1,000 00 per annum.	July 22, 1912.	Aug. 17, 1912.	8	81.3	Oct. 10, 1912.
Samuel W. Grubb	Draftsman	900 00 per annum.	July 22, 1912.	Aug. 17, 1912.	4	86.5	Sept. 10, 1912.

Bureau of Surveys—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Guy K. Haldeman.....	Draftsman.....	\$1,000 00 per annum.....	Mar. 6, 1912.....	May 7, 1912.....	10	78.92	July 5, 1912.
Felix D. Hurwitz.....	Draftsman.....	900 00 per annum.....	Mar. 6, 1912.....	May 7, 1912.....	2	90.26	June 7, 1912.
Albert O. Kay.....	Draftsman.....	1,000 00 per annum.....	Mar. 6, 1912.....	May 7, 1912.....	13	76.06	July 20, 1912.
Joseph P. Liebesch.....	Draftsman.....	900 00 per annum.....	Mar. 6, 1912.....	May 7, 1912.....	1	90.26	May 18, 1912.
Henry Linker.....	Draftsman.....	0 47 per hour.....	July 22, 1912.....	Aug. 17, 1912.....	6	82.9	Sept. 11, 1912.
Benjamin G. Love.....	Draftsman.....	1,000 00 per annum.....	July 25, 1912.....	Aug. 7, 1912.....	2	88.6	Aug. 9, 1912.
William L. Meek.....	Draftsman.....	1,000 00 per annum.....	Mar. 6, 1912.....	May 7, 1912.....	8	85.86	June 14, 1912.
Frazer S. Mousghan.....	Draftsman.....	0 47 per hour.....	July 22, 1912.....	Aug. 17, 1912.....	7	82.2	Sept. 11, 1912.
Joseph A. McCormick.....	Draftsman.....	900 00 per annum.....	July 22, 1912.....	Aug. 17, 1912.....	12	73.3	Oct. 22, 1912.
J. A. Thaman.....	Draftsman.....	1,000 00 per annum.....	July 25, 1912.....	Aug. 7, 1912.....	6	75.9	Nov. 4, 1912.
Alfred A. Townsend.....	Draftsman.....	1,000 00 per annum.....	Mar. 6, 1912.....	May 7, 1912.....	5	87.	June 14, 1912.
Alfred A. Townsend.....	Draftsman.....	1,500 00 per annum.....	July 25, 1912.....	Aug. 7, 1912.....	4	83.4	Sept. 3, 1912.
Philip A. Weigel.....	Draftsman.....	1,000 00 per annum.....	Mar. 6, 1912.....	May 7, 1912.....	16	71.84	Nov. 4, 1912.
Charles H. Wolf.....	Draftsman.....	1,000 00 per annum.....	Mar. 6, 1912.....	May 7, 1912.....	14	73.86	Aug. 8, 1912.
Albert J. Zahm.....	Draftsman.....	1,500 00 per annum.....	July 25, 1912.....	Aug. 7, 1912.....	1	89.3	Aug. 9, 1912.
Morris Ziegler.....	Draftsman.....	900 00 per annum.....	July 22, 1912.....	Aug. 17, 1912.....	9	80.6	Oct. 1, 1912.
Frank G. Deter.....	Draftsman, Architectural.....	15 00 per week.....	Mar. 6, 1912.....	May 7, 1912.....	3	89.52	June 7, 1912.

Bureau of Surveys—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Clarence O. Schaefer.....	Draftsman, Engineering.....	\$0 50 per hour.....	Oct. 14, 1912.....	Nov. 1, 1912.....	1	70.1	Nov. 4, 1912.
Joseph G. Haines.....	Engineer.....	1,000 00 per annum.....	May 25, 1911.....	June 22, 1911.....	8	70.76	Nov. 13, 1912.
Maudes Golder.....	Engineer, Assistant.....	1,500 00 per annum.....	July 19, 1912.....	Aug. 20, 1912.....	4	71.4	Oct. 26, 1912.
George M. Heller.....	Engineer, Asst., Subway Constr.....	1,800 00 per annum.....	Sept. 7, 1912.....	Sept. 18, 1912.....	2	81.12	Oct. 23, 1912.
Henry F. Shelley.....	Engineer, Asst., Sewer Plans.....	3,000 00 per annum.....	July 19, 1912.....	Aug. 20, 1912.....	1	78.8	Aug. 22, 1912.
William L. Stevenson.....	Engineer, Asst., Sewage Disposal.....	2,400 00 per annum.....	Oct. 1, 1912.....	Nov. 12, 1912.....	1	90.82	Nov. 18, 1912.
Stanley B. Smith.....	Engineer, Civil.....	1,380 00 per annum.....	Sept. 7, 1912.....	Sept. 17, 1912.....	2	84.	Sept. 30, 1912.
Alfred A. Townsend.....	Engineer, Civil.....	1,500 00 per annum.....	Sept. 7, 1912.....	Sept. 18, 1912.....	5	71.75	Oct. 23, 1912.
William H. Yetman, Jr.....	Engineer, Civil.....	1,200 00 per annum.....	Sept. 7, 1912.....	Sept. 17, 1912.....	4	72.4	Sept. 30, 1912.
Thomas J. Grumm.....	Engineer, Stationary.....	1,000 00 per annum.....	Mar. 7, 1912.....	April 3, 1912.....	5	83.4	May 2, 1912.
Stacy Holeton.....	Engineer, Stationary.....	1,000 00 per annum.....	Mar. 7, 1912.....	April 3, 1912.....	6	81.	May 2, 1912.
Thomas E. Bruder.....	Engineer, Statistical.....	1,000 00 per annum.....	Oct. 9, 1912.....	Oct. 30, 1912.....	2	80.4	Nov. 8, 1912.
Lyle L. Jenne.....	Engineer, Statistical.....	1,000 00 per annum.....	Oct. 9, 1912.....	Oct. 30, 1912.....	1	92.4	Nov. 4, 1912.
Charles W. Foster.....	Inspector Drain Connections.....	1,200 00 per annum.....	July 9, 1912.....	Aug. 9, 1912.....	1	94.7	Aug. 26, 1912.
William L. Kilpatrick.....	Inspector Drain Connections.....	1,200 00 per annum.....	July 9, 1912.....	Aug. 9, 1912.....	2	90.6	Aug. 26, 1912.
William H. Lindsey, Jr.....	Office Boy.....	360 00 per annum.....	Oct. 9, 1912.....	Oct. 30, 1912.....	3	92.	Nov. 18, 1912.
Philip B. Grossman.....	Rodman.....	60 00 per month.....	Mar. 6, 1912.....	May 6, 1912.....	2	92.76	July 24, 1912.
James A. Healin.....	Rodman.....	60 00 per month.....	Mar. 6, 1912.....	May 6, 1912.....	6	86.92	Aug. 1, 1912.

Bureau of Surveys—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Marvin H. Kohler	Rodman	\$60 00 per month.	Mar. 6, 1912.	May 6, 1912.	1	93.16	July 24, 1912.
Joseph A. McCormick	Rodman	60 00 per month.	Mar. 6, 1912.	May 6, 1912.	10	82.76	Sept. 4, 1912.
Phillip A. Randall	Rodman	60 00 per month.	Mar. 6, 1912.	May 6, 1912.	7	85.92	Aug. 2, 1912.
William L. Ritter	Rodman	60 00 per month.	Mar. 6, 1912.	May 6, 1912.	5	89.52	Aug. 2, 1912.
G. Otto Schubert	Rodman	60 00 per month.	Mar. 6, 1912.	May 6, 1912.	9	85.56	Aug. 2, 1912.
James H. Stevenson	Rodman	60 00 per month.	Mar. 6, 1912.	May 6, 1912.	3	85.6	Aug. 2, 1912.
Frederick T. Thorpe	Rodman	40 00 per month.	Mar. 6, 1912.	May 6, 1912.	3	92.06	Aug. 2, 1912.
Edward P. Leeds	Statistician	0 65 per hour.	Sept. 27, 1912.	Oct. 16, 1912.	1	83.8	Oct. 22, 1912.
Thomas E. Bruder	Statistician, Assistant	0 47 per hour.	Sept. 27, 1912.	Oct. 16, 1912.	4	81.8	Oct. 22, 1912.
Louis L. Austin	Stenographer and Typewriter	840 00 per annum.	July 16, 1912.	Aug. 14, 1912.	1	90.4	Aug. 20, 1912.
Walter T. Butterfield	Stenographer and Typewriter	900 00 per annum.	Mar. 22, 1912.	April 19, 1912.	13	86.64	June 12, 1912.
W. Raymond Flinn	Stenographer and Typewriter	900 00 per annum.	Mar. 22, 1912.	April 19, 1912.	17	86.05	May 15, 1912.
John N. Dawson	Stenographer and Record Clerk	900 00 per annum.	Nov. 3, 1911.	Nov. 23, 1911.	1	87.82	July 25, 1912.
John J. Foran	Stenographer and Record Clerk	900 00 per annum.	Nov. 3, 1911.	Nov. 23, 1911.	7	78.48	July 23, 1912.
Samuel Korn	Stenographer and Record Clerk	840 00 per annum.	Nov. 3, 1911.	Nov. 23, 1911.	11	74.6	Oct. 5, 1912.
Maurice T. Connell	Transitman	840 00 per annum.	Mar. 6, 1912.	May 6, 1912.	5	80.36	Aug. 23, 1912.
Joseph O. Gibbs	Transitman	840 00 per annum.	Mar. 6, 1912.	May 6, 1912.	8	76.36	Nov. 1, 1912.

Bureau of Surveys—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Thomas E. James.	Transitman	\$340 00 per annum.	Mar. 6, 1912.	May 6, 1912.	4	81.16	Aug. 5, 1912.
Samuel T. Wilson.	Transitman	840 00 per annum.	Mar. 6, 1912.	May 6, 1912.	6	79.96	Aug. 26, 1912.

BUREAU OF WATER.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Charles S. Kelso.	Assistant to General Supt.	\$1,500 00 per annum.	July 16, 1912.	Aug. 23, 1912.	5	70.8	Aug. 23, 1912.
James Coleman	Blacksmith	3 75 per day.	July 26, 1912.	July 30, 1912.	1	98.	Aug. 2, 1912.
Frank S. Hougendobler	Blacksmith	3 75 per day.	July 26, 1912.	July 30, 1912.	2	98.8	Aug. 2, 1912.
Anthony Duffy	Boilermaker's Helper	3 00 per day.	Mar. 13, 1912.	April 29, 1912.	1	97.34	May 10, 1912.
Edward McCormick	Boilermaker's Helper	3 00 per day.	Mar. 13, 1912.	April 29, 1912.	3	94.7	May 10, 1912.
John Anderson	Carpenter	4 00 per day.	May 31, 1911.	Aug. 7, 1911.	22	88.8	July 18, 1912.
Henry S. Chubb.	Carpenter	4 00 per day.	May 31, 1911.	Aug. 7, 1911.	9	88.8	July 18, 1912.
George W. Elston.	Carpenter	4 00 per day.	May 31, 1911.	Aug. 7, 1911.	4	91.	July 18, 1912.
Albert E. Field.	Carpenter	4 00 per day.	May 31, 1911.	Aug. 7, 1911.	21	88.98	July 18, 1912.
Willbur S. Kenworthy.	Carpenter	4 00 per day.	May 31, 1911.	Aug. 7, 1911.	27	80.86	July 18, 1912.

Bureau of Water—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
John McKeown	Carpenter	\$4 00 per day	May 31, 1911	Aug. 7, 1911	23	83.52	July 13, 1912.
John E. Martin	Carpenter	4 00 per day	May 31, 1911	Aug. 7, 1911	19	85.88	July 13, 1912.
William Quackenbush	Carpenter	4 00 per day	May 31, 1911	Aug. 7, 1911	24	83.	July 13, 1912.
John F. Coward	Caulker	3 00 per day	Oct. 14, 1912	Oct. 25, 1912	2	95.5	Oct. 26, 1912.
Frank M. Hays	Caulker	3 00 per day	Oct. 14, 1912	Oct. 25, 1912	3	95.6	Oct. 26, 1912.
Frank Martucci	Caulker	3 00 per day	Oct. 14, 1912	Oct. 25, 1912	4	94.25	Oct. 26, 1912.
Charles Moore	Caulker	3 00 per day	Oct. 14, 1912	Oct. 25, 1912	5	92.5	Nov. 11, 1912.
John W. Pipes	Caulker	3 00 per day	Oct. 14, 1912	Oct. 25, 1912	1	96.85	Oct. 26, 1912.
John Brereton	Chauffeur	3 00 per day	Feb. 26, 1912	April 3, 1912	1	80.85	June 1, 1912.
Oscar Miller	Chauffeur	3 00 per day	Feb. 26, 1912	April 3, 1912	6	72.3	June 15, 1912.
Frank M. Crumback	Chemist, Assistant	3 00 per day	Oct. 8, 1912	Dec. 5, 1912	1	87.25	Dec. 10, 1912.
William Brantz	Clerk	3 00 per day	Mar. 13, 1912	May 13, 1912	24	89.08	Aug. 17, 1912.
William G. Flood	Clerk	1,000 00 per annum	Mar. 13, 1912	May 13, 1912	19	89.43	Nov. 11, 1912.
Matthew Greenlee	Clerk	3 00 per day	Mar. 13, 1912	May 13, 1912	36	87.08	Aug. 17, 1912.
Edward Hanaman	Clerk	800 00 per annum	Mar. 13, 1912	May 13, 1912	16	89.08	June 15, 1912.
O. J. McLaughlin	Clerk	800 00 per annum	Mar. 13, 1912	May 13, 1912	21	89.43	July 16, 1912.
Daniel T. McShea	Clerk	3 00 per day	Mar. 13, 1912	May 13, 1912	30	88.88	Aug. 7, 1912.

Bureau of Water—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
G. Howard Moore	Clerk	\$3 00 per day	Mar. 18, 1912	May 13, 1912	25	89.	Aug. 7, 1912.
Roy Rubin	Clerk	800 00 per annum.	Mar. 18, 1912	May 13, 1912	19	89.47	June 15, 1912.
William H. Sinnamon	Clerk	800 00 per annum.	Mar. 18, 1912	May 13, 1912	18	89.8	June 15, 1912.
James P. Van Hook, Jr.	Clerk	3 00 per day	Mar. 18, 1912	May 13, 1912	32	88.27	Aug. 17, 1912.
Charles Bleacher	Coalpasser	720 00 per annum.	July 9, 1912	July 17, 1912	11	87.5	Dec. 23, 1912.
Dennis J. Butler	Coalpasser	720 00 per annum.	July 9, 1912	July 17, 1912	12	87.	Dec. 23, 1912.
Joseph Byrne	Coalpasser	720 00 per annum.	July 9, 1912	July 17, 1912	8	89.5	Dec. 23, 1912.
Jessie F. Griffith	Coalpasser	720 00 per annum.	July 9, 1912	July 17, 1912	7	89.5	Dec. 23, 1912.
Harry E. Hammer	Coalpasser	720 00 per annum.	July 9, 1912	July 17, 1912	3	95.5	Nov. 23, 1912.
James O. Johnson	Coalpasser	720 00 per annum.	July 9, 1912	July 17, 1912	9	89.5	Dec. 23, 1912.
William A. Johnson	Coalpasser	720 00 per annum.	July 9, 1912	July 17, 1912	5	91.	Nov. 23, 1912.
John J. Mallon	Coalpasser	720 00 per annum.	July 9, 1912	July 17, 1912	10	89.	Dec. 23, 1912.
John O'Toole	Coalpasser	720 00 per annum.	July 9, 1912	July 17, 1912	4	91.5	Nov. 23, 1912.
George Stafford	Coalpasser	720 00 per annum.	July 9, 1912	July 17, 1912	13	87.	Dec. 23, 1912.
Anderson O. Wilkins	Coalpasser	720 00 per annum.	July 9, 1912	July 17, 1912	1	97.	Nov. 23, 1912.
James B. Faulkner	Draftsman	900 00 per annum.	Mar. 6, 1912	May 7, 1912	5	79.4	June 1, 1912.
William E. Kuehn	Draftsman, Chief	1,800 00 per annum.	July 22, 1912	Aug. 20, 1912	1	73.8	Sept. 1, 1912.

Bureau of Water—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
George R. Boyce.....	Driller	\$3 00 per day.....	July 24, 1912.....	Aug. 3, 1912.....	5	96.2	Aug. 12, 1912.
Edward Osborne	Driller	3 00 per day.....	July 24, 1912.....	Aug. 3, 1912.....	1	96.6	Aug. 1, 1912.
Jacob Bower, Jr.....	Driver	2 25 per day.....	July 29, 1912.....	Aug. 6, 1912.....	11	96.3	Dec. 4, 1912.
Edward Idell	Driver	2 25 per day.....	July 29, 1912.....	Aug. 6, 1912.....	10	96.8	Dec. 4, 1912.
Edward E. McMaster.....	Driver	2 25 per day.....	July 29, 1912.....	Aug. 6, 1912.....	8	97.1	Nov. 23, 1912.
Lemuel O. Orr.....	Driver	2 25 per day.....	July 29, 1912.....	Aug. 6, 1912.....	9	96.9	Nov. 21, 1912.
Louis F. Bogla.....	Engineer	1,000 00 per annum.....	Oct. 13, 1911.....	Nov. 23, 1911.....	1	92.2	Jan. 1, 1912.
John MacFall	Engineer	1,000 00 per annum.....	Mar. 7, 1912.....	April 3, 1912.....	4	83.72	April 13, 1912.
William H. Wilcox.....	Engineer	1,000 00 per annum.....	Oct. 13, 1911.....	Nov. 23, 1911.....	8	77.2	Jan. 1, 1912.
Edwin J. Hart.....	Engineer in charge of Boilers.....	1,500 00 per annum.....	Mar. 1, 1912.....	April 3, 1912.....	1	94.48	April 24, 1912.
Lyle L. Jenne.....	Engineer in charge Filter Records.....	1,500 00 per annum.....	Sept. 7, 1912.....	Sept. 19, 1912.....	1	87.42	Dec. 1, 1912.
William H. Todd.....	Engineer, Pump	1,000 00 per annum.....	July 13, 1912.....	Aug. 18, 1912.....	1	83.8	Dec. 1, 1912.
Anthony A. Beck.....	Engineer, Stationary	1,000 00 per annum.....	May 25, 1911.....	June 22, 1911.....	2	78.88	Jan. 12, 1912.
John J. Orr.....	Engineer, Stationary	1,000 00 per annum.....	Mar. 7, 1912.....	April 3, 1912.....	3	91.20	April 13, 1912.
Harry J. Kinney.....	Engineer, Stationary	1,000 00 per annum.....	Mar. 7, 1912.....	April 3, 1912.....	7	78.04	May 9, 1912.
J. Edward Twiggs.....	Engineer, Stationary	1,000 00 per annum.....	Mar. 7, 1912.....	April 3, 1912.....	9	74.8	May 15, 1912.
John Why	Engineer, Stationary	1,000 00 per annum.....	Oct. 13, 1911.....	Nov. 23, 1911.....	11	70.6	Jan. 19, 1912.

Bureau of Water—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Jackson Brelah	Filter Attendant	\$1,000 00 per annum.	Mar. 13, 1912	April 29, 1912	3	94.	May 7, 1912.
William J. Crooks	Filter Attendant	800 00 per annum.	Mar. 13, 1912	April 29, 1912	9	77.	May 10, 1912.
John Duncan	Filter Attendant	1,000 00 per annum.	Mar. 13, 1912	April 29, 1912	4	90.8	May 7, 1912.
Benjamin F. Gilbert	Filter Attendant	800 00 per annum.	Mar. 13, 1912	April 29, 1912	10	76.6	May 10, 1912.
John Moore Montgomery	Filter Attendant	800 00 per annum.	July 31, 1912	Aug. 20, 1912	1	92.1	Sept. 4, 1912.
Miles Platt	Filter Attendant	1,000 00 per annum.	Mar. 13, 1912	April 29, 1912	1	97.66	May 7, 1912.
Frederick Taylor	Filter Attendant	1,000 00 per annum.	Mar. 13, 1912	April 29, 1912	5	90.4	May 7, 1912.
James Taylor	Filter Attendant	800 00 per annum.	Mar. 13, 1912	April 29, 1912	6	88.48	May 10, 1912.
William A. Wagner	Filter Attendant	800 00 per annum.	Mar. 13, 1912	April 29, 1912	8	82.26	May 10, 1912.
Samuel Conn	Fireman	800 00 per annum.	July 27, 1912	Aug. 6, 1912	8	86.6	Aug. 19, 1912.
Patrick Coyle	Fireman	800 00 per annum.	July 27, 1912	Aug. 6, 1912	1	92.9	Aug. 19, 1912.
Henry John Coyne	Fireman	800 00 per annum.	July 27, 1912	Aug. 6, 1912	5	89.2	Aug. 19, 1912.
Peter J. Cunningham	Fireman	800 00 per annum.	July 27, 1912	Aug. 6, 1912	12	83.5	Aug. 19, 1912.
William Dougherty	Fireman	800 00 per annum.	July 27, 1912	Aug. 6, 1912	2	91.3	Aug. 19, 1912.
George Wm. Hughes	Fireman	800 00 per annum.	July 27, 1912	Aug. 6, 1912	10	88.7	Aug. 19, 1912.
James Jasper	Fireman	800 00 per annum.	May 28, 1911	July 29, 1911	14	87.2	June 15, 1912.
Robert Johnson	Fireman	800 00 per annum.	July 27, 1912	Aug. 6, 1912	4	90.8	Aug. 19, 1912.

Bureau of Water—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
James M. Jones.....	Fireman	\$800 00 per annum.	July 27, 1912.	Aug. 6, 1912.	6	89.2	Aug. 19, 1912.
Richard Killebrew.....	Fireman	800 00 per annum.	July 27, 1912.	Aug. 6, 1912.	13	81.4	Aug. 19, 1912.
John Montgomery.....	Fireman	840 00 per annum.	July 27, 1912.	Aug. 6, 1912.	3	91.1	Aug. 19, 1912.
John J. Mooney.....	Fireman	800 00 per annum.	July 27, 1912.	Aug. 6, 1912.	11	82.9	Aug. 19, 1912.
Patrick F. Moylan.....	Fireman	800 00 per annum.	July 27, 1912.	Aug. 6, 1912.	7	89.5	Aug. 19, 1912.
Frank B. Slaughter.....	Fireman	800 00 per annum.	July 27, 1912.	Aug. 6, 1912.	9	86.	Aug. 19, 1912.
William Spell.....	Fireman	800 00 per annum.	May 26, 1911.	July 29, 1911.	10	83.44	April 1, 1912.
Frank Louis Drake.....	Foreman of Laborers	3 00 per day.	July 30, 1912.	Aug. 6, 1912.	5	83.5	Aug. 23, 1912.
John J. Hogan.....	Foreman of Laborers	900 00 per annum.	July 30, 1912.	Aug. 6, 1912.	1	83.7	Aug. 23, 1912.
Harry H. Rittenhouse.....	Foreman of Laborers	3 00 per day.	July 30, 1912.	Aug. 6, 1912.	3	85.7	Aug. 23, 1912.
William Thwaites.....	Foreman of Laborers	900 00 per annum.	July 30, 1912.	Aug. 6, 1912.	2	86.1	Aug. 23, 1912.
Gus Wollenburg.....	Foreman of Laborers	3 00 per day.	July 30, 1912.	Aug. 6, 1912.	9	82.	Sept. 18, 1912.
John F. Kelly.....	Foreman of Repairs	850 00 per annum.	July 30, 1912.	Aug. 6, 1912.	4	72.3	Sept. 4, 1912.
Fred W. Mathias.....	Foreman of Repairs	850 00 per annum.	July 30, 1912.	Aug. 6, 1912.	2	84.5	Sept. 4, 1912.
Frederick W. Anton.....	Inspector	1,000 00 per annum.	Feb. 27, 1912.	May 6, 1912.	11	85.7	June 1, 1912.
Mitchell Bernstein.....	Inspector	1,000 00 per annum.	Feb. 27, 1912.	May 6, 1912.	8	86.85	June 1, 1912.
John J. Gaffney.....	Inspector	1,000 00 per annum.	Feb. 27, 1912.	May 6, 1912.	12	85.4	June 1, 1912.

Bureau of Water—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Stanley W. Greene	Inspector	\$1,000 00 per annum.	Feb. 27, 1912	May 6, 1912	9	86.85	June 1, 1912.
Leo Haggarty	Inspector	1,000 00 per annum.	Feb. 27, 1912	May 6, 1912	16	85.2	Sept. 23, 1912.
Frank McAvoy	Inspector	1,000 00 per annum.	Feb. 27, 1912	May 6, 1912	5	88.	June 1, 1912.
Edwin S. Muir, Jr.	Inspector	1,000 00 per annum.	Feb. 27, 1912	May 6, 1912	17	85.	Nov. 4, 1912.
Joseph A. Troy	Inspector	1,000 00 per annum.	Feb. 27, 1912	May 6, 1912	10	86.	June 1, 1912.
Joseph A. Weber	Inspector	1,000 00 per annum.	Feb. 27, 1912	May 6, 1912	13	85.4	Aug. 7, 1912.
Edward P. Laskey	Machinist's Helper	2 50 per day	Mar. 13, 1912	April 29, 1912	3	96.2	May 10, 1912.
John F. McIlravey	Machinist's Helper	3 00 per day	Mar. 13, 1912	April 29, 1912	1	96.88	Oct. 11, 1912.
James W. Kyle	Purveyor	1,480 00 per annum.	July 31, 1912	Aug. 14, 1912	7	73.6	Aug. 16, 1912.
Daniel A. McCrudden	Purveyor	1,480 00 per annum.	July 31, 1912	Aug. 14, 1912	1	83.5	Aug. 15, 1912.
Arthur C. Merrill	Purveyor	1,480 00 per annum.	July 31, 1912	Aug. 14, 1912	3	80.5	Aug. 23, 1912.
Peter J. Rorke	Purveyor	1,480 00 per annum.	July 31, 1912	Aug. 14, 1912	5	74.5	Aug. 15, 1912.
Richard L. Bonsall	Oiler	800 00 per annum.	July 10, 1912	July 19, 1912	9	92.	Aug. 26, 1912.
Thomas Bray	Oiler	800 00 per annum.	July 10, 1912	July 19, 1912	11	91.4	Aug. 26, 1912.
John J. Cain	Oiler	800 00 per annum.	July 10, 1912	July 19, 1912	6	94.2	Aug. 26, 1912.
John L. Day	Oiler	800 00 per annum.	July 10, 1912	July 19, 1912	7	93.2	Aug. 26, 1912.
Frank Dougherty	Oiler	\$300 00 per annum.	July 10, 1912	July 19, 1912	18	88.	Nov. 19, 1912.

Bureau of Water—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Joseph J. Ellis, Jr.	Oiler	\$80 00 per annum.	July 10, 1912.	July 19, 1912.	13	90.8	Aug. 26, 1912.
Samuel Everman	Oiler	\$80 00 per annum.	July 10, 1912.	July 19, 1912.	5	94.2	Aug. 26, 1912.
Harry H. Garner	Oiler	\$80 00 per annum.	July 10, 1912.	July 19, 1912.	19	88.	Dec. 21, 1912.
Richard H. Inskip	Oiler	\$80 00 per annum.	May 25, 1911.	July 17, 1911.	2	89.2	April 3, 1912.
Martin Kelly	Oiler	\$80 00 per annum.	July 10, 1912.	July 19, 1912.	12	90.8	Aug. 26, 1912.
Samuel Milligan, Jr.	Oiler	\$80 00 per annum.	July 10, 1912.	July 19, 1912.	14	89.8	Nov. 18, 1912.
Robert Moncrieff	Oiler	\$80 00 per annum.	July 10, 1912.	July 19, 1912.	1	95.4	Aug. 26, 1912.
Arthur Rans	Oiler	\$80 00 per annum.	May 25, 1911.	July 17, 1911.	3	89.2	May 2, 1912.
Warren J. Reynolds	Oiler	\$80 00 per annum.	May 25, 1911.	July 17, 1911.	5	88.4	April 3, 1912.
Joseph J. Schofield	Oiler	\$80 00 per annum.	July 10, 1912.	July 19, 1912.	8	95.4	Aug. 26, 1912.
John W. Smith	Oiler	\$80 00 per annum.	July 10, 1912.	July 19, 1912.	4	94.8	Aug. 26, 1912.
Gilmore Wooler	Oiler	\$80 00 per annum.	July 10, 1912.	July 19, 1912.	3	92.8	Aug. 26, 1912.
John K. Oastor	Painter	\$ 60 per day.	Oct. 25, 1912.	Nov. 8, 1912.	5	86.	Dec. 8, 1912.
William J. Hazley	Painter	\$ 60 per day.	June 1, 1911.	Aug. 7, 1911.	22	85.	July 17, 1912.
William N. Irwin	Painter	\$ 60 per day.	June 1, 1911.	Aug. 7, 1911.	6	94.11	May 27, 1912.
Edward H. Johnson	Painter	\$ 60 per day.	June 1, 1911.	Aug. 7, 1911.	21	85.56	July 17, 1912.
Robert E. Lee	Painter	\$3 60 per day.	June 1, 1911.	Aug. 7, 1911.	18	89.9	July 17, 1912.

Bureau of Water—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William H. Johnston.	Painter	3 00 per day	June 1, 1911	Aug. 7, 1911	17	90.1	July 17, 1912.
Augustus Thompson	Painter	3 00 per day	June 1, 1911	Aug. 7, 1911	19	88.86	July 17, 1912.
Benjamin M. Harris.	Plumber	3 50 per day	Sept. 9, 1912	Sept. 18, 1912	3	96.	Sept. 20, 1912.
John B. Hill	Plumber	3 50 per day	Sept. 9, 1912	Sept. 18, 1912	1	97.60	Sept. 20, 1912.
Isaac Smyth	Plumber	3 50 per day	Sept. 9, 1912	Sept. 18, 1912	2	97.	Sept. 20, 1912.
Alfred M. Wise.	Plumber	3 50 per day	Sept. 9, 1912	Sept. 18, 1912	4	94.	Sept. 20, 1912.
Charles Chambers	Plumber's Helper	2 50 per day	Mar. 13, 1912	April 29, 1912	2	91.1	Sept. 17, 1912.
John D. Martin.	Plumber's Helper	2 50 per day	Mar. 13, 1912	April 29, 1912	1	91.20	Dec. 11, 1912.
John F. Mullin	Plumber's Helper	2 50 per day	Mar. 13, 1912	April 29, 1912	4	90.7	Sept. 17, 1912.
Adolph G. Rau, Jr.	Plumber's Helper	2 50 per day	Mar. 13, 1912	April 29, 1912	3	91.08	Sept. 17, 1912.
George A. Dickel.	Rodman	720 00 per annum.	Mar. 6, 1912	May 6, 1912	15	76.29	Oct. 10, 1912.
Lewis E. Eastwood.	Rodman	720 00 per annum.	Mar. 6, 1912	May 6, 1912	14	76.56	Oct. 10, 1912.
Anna M. Downey.	Stenographer and Typewriter.	900 00 per annum.	Mar. 22, 1912	April 19, 1912	6	90.98	May 6, 1912.
Barbara S. Kroneback.	Stenographer and Typewriter.	3 00 per day	Mar. 22, 1912	April 19, 1912	21	84.9	Oct. 18, 1912.
Frances Rohland	Stenographer and Typewriter.	3 00 per day	Mar. 22, 1912	April 19, 1912	10	88.86	July 24, 1912.
John H. Burton.	Superintendent, Repair Shop	1,500 00 per annum.	Mar. 1, 1912	April 12, 1912	2	87.3	April 24, 1912.
Louis F. Bogla.	Superintendent, Water Filters	1,500 00 per annum.	Sept. 7, 1912	Sept. 19, 1912	1	93.97	Sept. 26, 1912.

DEPARTMENT OF SUPPLIES.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
George Wm. Merkle	Bookkeeper	\$1,000 00 per annum.	June 8, 1912.	June 13, 1912.	1	90.06	July 1, 1912.
John A. Smith	Clerk	900 00 per annum.	Mar. 18, 1912.	May 13, 1912.	20	89.45	July 1, 1912.
Edward Blaustein	Clerk, Extra	3 00 per day.	Jan. 11, 1912.	Jan. 19, 1912.	7	94.5	Sept. 24, 1912.
Charles Gould	Clerk, Extra	3 00 per day.	Jan. 11, 1912.	Jan. 19, 1912.	6	94.5	Aug. 15, 1912.
Allen L. Greenberg	Clerk, Extra	3 00 per day.	Jan. 11, 1912.	Jan. 19, 1912.	4	94.9	April 1, 1912.
Wilson Lang	Clerk, Requisition	1,500 00 per annum.	May 29, 1912.	June 5, 1912.	1	73.45	June 7, 1912.
James L. Shaw	Inspector	1,000 00 per annum.	Oct. 10, 1911.	Nov. 21, 1911.	1	91.64	Jan. 2, 1912.
S. Harry Eppelstetner	Inspector	1,200 00 per annum.	June 1, 1912.	June 15, 1912.	9	85.9	Nov. 14, 1912.
Allen L. Greenberg	Inspector	1,200 00 per annum.	June 1, 1912.	June 15, 1912.	5	88.2	Aug. 1, 1912.
Frank J. Lennon	Inspector	1,200 00 per annum.	June 1, 1912.	June 15, 1912.	8	86.65	July 1, 1912.
Warren T. Logan	Inspector	1,200 00 per annum.	June 1, 1912.	June 15, 1912.	1	92.45	June 19, 1912.
George White	Inspector	1,200 00 per annum.	June 1, 1912.	June 15, 1912.	2	91.15	July 1, 1912.
May P. Foulke	Stenographer	1,200 00 per annum.	Mar. 25, 1912.	April 19, 1912.	5	92.78	May 1, 1912.
Sarah M. E. Davies	Stenographer, Assistant	900 00 per annum.	Mar. 23, 1912.	April 19, 1912.	11	87.88	June 24, 1912.
Mary Urwiler	Stenographer, Assistant	900 00 per annum.	Mar. 22, 1912.	April 19, 1912.	3	92.7	May 1, 1912.

DEPARTMENT OF PUBLIC HEALTH AND CHARITIES.
DIRECTOR'S OFFICE.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Anthony J. McCrea.	Chauffeur	\$1,000 00 per annum.	July 19, 1912.	Aug. 12, 1912.	2	85.5	Dec. 19, 1912.
Ella Frances Harris.	Special Agent	1,200 00 per annum.	Feb. 29, 1912.	April 1, 1912.	1	92.	April 1, 1912.
Mrs. Lena M. Roberts.	Special Agent, Assistant	1,000 00 per annum.	Feb. 29, 1912.	April 1, 1912.	2	87.75	Dec. 24, 1912.
Abbie K. Tuttle.	Stenographer and Typewriter.	720 00 per annum.	Mar. 21, 1912.	April 19, 1912.	3	91.82	May 6, 1912.

BUREAU OF HEALTH.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
George H. Shuman.	Agent, Prevention of Diseases.	\$1,500 00 per annum.	Oct. 2, 1912.	Oct. 21, 1912.	2	84.43	Oct. 21, 1912.
William H. Rogers.	Asst., Antitoxin Laboratory.	1,000 00 per annum.	Oct. 3, 1912.	Oct. 14, 1912.	2	89.	Oct. 15, 1912.
Katharine Coates.	Attendant, Dental Clinic.	800 00 per annum.	Mar. 13, 1912.	May 14, 1912.	3	87.24	May 27, 1912.
Aaron Barlow.	Bacteriologist, Fourth Assistant.	800 00 per annum.	July 29, 1912.	Aug. 16, 1912.	1	95.17	Aug. 22, 1912.
Edna S. Valentine.	Bacteriologist, Third Assistant.	900 00 per annum.	July 29, 1912.	Aug. 16, 1912.	4	89.26	Aug. 22, 1912.
Washington M. Helmach.	Butcher.	900 00 per annum.	July 8, 1912.	July 13, 1912.	2	93.8	July 22, 1912.
Matthew Blakeley, Jr.	Chauffeur.	900 00 per annum.	Feb. 26, 1912.	April 3, 1912.	4	74.55	April 26, 1912.

Bureau of Health—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Jay O. Coulston.....	Chaufeur.....	\$800 00 per annum.....	July 12, 1912.....	Aug. 12, 1912.....	5	82.	Aug. 23, 1912.
Timothy F. Donovan.....	Chaufeur.....	900 00 per annum.....	July 19, 1912.....	Aug. 12, 1912.....	4	83.9	Aug. 23, 1912.
Paul J. Kohn.....	Chaufeur.....	900 00 per annum.....	July 19, 1912.....	Aug. 12, 1912.....	3	84.5	Oct. 9, 1912.
William E. MacFarland.....	Chaufeur.....	1,000 00 per annum.....	Feb. 26, 1912.....	April 3, 1912.....	2	77.75	April 10, 1912.
George O. Nagle.....	Chaufeur.....	900 00 per annum.....	July 19, 1912.....	Aug. 12, 1912.....	6	81.9	Nov. 13, 1912.
Norwood R. Solly.....	Chaufeur.....	1,000 00 per annum.....	Feb. 26, 1912.....	April 3, 1912.....	5	74.3	April 10, 1912.
Franklin T. Wilson.....	Chaufeur.....	900 00 per annum.....	Feb. 28, 1911.....	June 17, 1911.....	6	79.2	May 17, 1912.
John H. Catsiff.....	Clerk.....	720 00 per annum.....	Mar. 15, 1912.....	April 24, 1912.....	23	91.15	Oct. 10, 1912.
Anna V. Erb.....	Clerk.....	1,000 00 per annum.....	Mar. 19, 1912.....	May 13, 1912.....	7	90.9	Aug. 7, 1912.
Sophia L. Foerster.....	Clerk.....	1,000 00 per annum.....	Mar. 19, 1912.....	May 13, 1912.....	5	91.83	May 23, 1912.
Edna Hyde.....	Clerk.....	1,000 00 per annum.....	Mar. 19, 1912.....	May 13, 1912.....	9	90.3	June 26, 1912.
James M. Leslie, Jr.....	Clerk.....	1,500 00 per annum.....	Mar. 20, 1912.....	April 24, 1912.....	2	92.4	May 2, 1912.
Mary E. Macdonald.....	Clerk.....	1,000 00 per annum.....	Mar. 19, 1912.....	May 13, 1912.....	33	87.25	Nov. 1, 1912.
Joseph J. Griffin.....	Clerk, Chief.....	1,200 00 per annum.....	Sept. 26, 1912.....	Oct. 3, 1912.....	4	70.35	Oct. 3, 1912.
Edward F. Everett.....	Dentist.....	700 00 per annum.....	July 5, 1912.....	July 20, 1912.....	1	87.3	Aug. 1, 1912.
James J. Galligan.....	Dentist.....	700 00 per annum.....	July 5, 1912.....	July 20, 1912.....	10	71.5	Aug. 1, 1912.
Frank J. Gibbons.....	Dentist.....	700 00 per annum.....	July 5, 1912.....	July 20, 1912.....	4	79.5	Aug. 1, 1912.

Bureau of Health—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Walker L. Mandell.....	Dentist	\$700 00 per annum..	July 5, 1912.....	July 20, 1912.....	2	87.	Aug. 1, 1912.
Herman J. Meyers.....	Dentist	700 00 per annum..	July 5, 1912.....	July 20, 1912.....	6	76.5	Aug. 1, 1912.
Ignatius F. Murphy.....	Dentist	700 00 per annum..	July 5, 1912.....	July 20, 1912.....	7	73.5	Aug. 1, 1912.
Bethnel G. Weber.....	Dentist	700 00 per annum..	July 5, 1912.....	July 20, 1912.....	13	70.5	Aug. 1, 1912.
Irving N. Wood.....	Dentist	700 00 per annum..	July 5, 1912.....	July 20, 1912.....	5	79.	Aug. 1, 1912.
James P. McAneeny.....	Disinfecter	1,000 00 per annum..	June 2, 1911.....	July 17, 1911.....	5	83.62	Feb. 15, 1912.
Alfred E. Dyer.....	Fireman	50 00 per month..	July 27, 1912.....	Aug. 6, 1912.....	15	80.7	Sept. 6, 1912.
Joseph Nicholls.....	Foreman	1,000 00 per annum..	Oct. 19, 1912.....	Nov. 6, 1912.....	1	93.18	Nov. 6, 1912.
Howard W. Taylor.....	Inspector, Asst. House Drainage..	1,300 00 per annum..	July 9, 1912.....	Aug. 17, 1912.....	3	83.65	Sept. 1, 1912.
Arthur D. Goldhaft.....	Inspector, Asst. Meat and Cattle..	1,000 00 per annum..	July 8, 1911.....	July 31, 1911.....	1	80.8	Aug. 1, 1912.
J. Paul Austin.....	Inspector, Assistant Medical	1,400 00 per annum..	Mar. 4, 1912.....	April 25, 1912.....	3	93.2	May 7, 1912.
Morris Cornfield.....	Inspector, Assistant Medical	1,400 00 per annum..	Mar. 4, 1912.....	April 25, 1912.....	6	90.9	May 7, 1912.
Joseph Felias.....	Inspector, Assistant Medical	1,400 00 per annum..	Mar. 4, 1912.....	April 25, 1912.....	5	91.1	May 7, 1912.
John H. Lilley.....	Inspector, Assistant Medical	1,400 00 per annum..	Mar. 4, 1912.....	April 25, 1912.....	7	90.6	May 7, 1912.
William T. Rees.....	Inspector, Assistant Medical	1,400 00 per annum..	Mar. 4, 1912.....	April 25, 1912.....	4	91.4	May 7, 1912.
Clarence Schaeffer.....	Inspector, Assistant Medical	1,400 00 per annum..	Mar. 4, 1912.....	April 25, 1912.....	2	93.4	May 7, 1912.
Clarence W. Simmons.....	Inspector, Assistant Medical	1,400 00 per annum..	April 18, 1911.....	June 15, 1911.....	5	83.4	April 24, 1912.

Bureau of Health—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Henry S. Wieder.....	Inspector, Assistant Medical	\$1,400 00 per annum.	Mar. 4, 1912.	April 25, 1912.	1	96.9	May 7, 1912.
Maurice A. Aronson.....	Inspector, Assistant Milk	1,020 00 per annum.	Oct. 7, 1912.	Oct. 22, 1912.	1	91.7	Nov. 3, 1912.
John J. Muldowney.....	Inspector, Asst. Tenement House.	1,200 00 per annum.	Oct. 10, 1912.	Oct. 29, 1912.	1	86.4	Dec. 14, 1912.
Howard B. Samuels.....	Inspector, Asst. Tenement House.	1,200 00 per annum.	May 25, 1911.	Sept. 12, 1911.	8	70.8	June 12, 1912.
Allen J. Hankele.....	Inspector, Chief Milk	1,900 00 per annum.	Oct. 7, 1912.	Oct. 16, 1912.	2	87.5	Nov. 4, 1912.
George W. Mench.....	Inspector, Nuisance	1,100 00 per annum.	Feb. 27, 1912.	May 6, 1912.	14	86.35	Aug. 23, 1912.
George B. Pfau.....	Inspector, Nuisance	1,100 00 per annum.	Feb. 27, 1912.	May 6, 1912.	7	87.25	May 10, 1912.
Walter H. Trumbauer.....	Inspector, Nuisance	1,100 00 per annum.	Feb. 27, 1912.	May 6, 1912.	4	88.1	May 10, 1912.
Michael J. Corcoran.....	Inspector, School Medical	600 00 per annum.	Jan. 20, 1912.	Feb. 13, 1912.	3	77.58	Oct. 16, 1912.
John Leo Donahue.....	Inspector, School Medical	600 00 per annum.	Jan. 20, 1912.	Feb. 13, 1912.	6	76.	Oct. 16, 1912.
William M. Gordon.....	Inspector, School Medical	600 00 per annum.	Jan. 20, 1912.	Feb. 13, 1912.	2	78.	Oct. 16, 1912.
William J. Ryan.....	Inspector, School Medical	600 00 per annum.	Jan. 20, 1912.	Feb. 13, 1912.	12	71.83	Nov. 16, 1912.
Morris A. Weinstein.....	Inspector, School Medical	600 00 per annum.	Jan. 20, 1912.	Feb. 13, 1912.	11	71.91	Nov. 16, 1912.
LeRoy A. Wilkes.....	Inspector, School Medical	600 00 per annum.	Jan. 20, 1912.	Feb. 13, 1912.	4	77.41	Oct. 16, 1912.
James M. G. Hincken.....	Inspector of Schools, Sup. Med.	1,500 00 per annum.	Feb. 23, 1912.	Mar. 15, 1912.	4	87.12	Mar. 19, 1912.
Bernard Kohn.....	Inspector of Schools, Sup. Med.	1,500 00 per annum.	Feb. 23, 1912.	Mar. 15, 1912.	5	87.04	Mar. 19, 1912.
Albert F. Moxey.....	Inspector of Schools, Sup. Med.	1,500 00 per annum.	Feb. 23, 1912.	Mar. 15, 1912.	1	92.4	Mar. 19, 1912.
Walter W. Roach.....	Inspector of Schools, Sup. Med.	1,500 00 per annum.	Feb. 23, 1912.	Mar. 15, 1912.	2	90.82	Mar. 19, 1912.
Ralph H. Spangler.....	Inspector of Schools, Sup. Med.	1,500 00 per annum.	Feb. 23, 1912.	Mar. 15, 1912.	8	86.72	Mar. 19, 1912.

Bureau of Health—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Martha O. W. Wallace.....	Laboratory Worker	50 00 per month.	Oct. 31, 1912.	Nov. 13, 1912.	3	98.5	Nov. 14, 1912.
Mary Gibbons.....	Laboratory Worker	35 00 per month.	Oct. 31, 1912.	Nov. 13, 1912.	8	78.	Nov. 1, 1912.
Edith G. Jones.....	Laboratory Worker	40 00 per month.	Oct. 31, 1912.	Nov. 13, 1912.	2	98.8	Nov. 14, 1912.
Mildred M. Krips.....	Laboratory Worker	\$40 00 per month.	Oct. 31, 1912.	Nov. 13, 1912.	4	91.9	Nov. 1, 1912.
Cecelia M. Marshall.....	Laboratory Worker	40 00 per month.	Oct. 31, 1912.	Nov. 13, 1912.	6	79.8	Nov. 1, 1912.
Anna E. Williams.....	Laboratory Worker	35 00 per month.	Oct. 31, 1912.	Nov. 13, 1912.	9	70.4	Nov. 1, 1912.
Erie H. Turner.....	Laundryman, Head	1,200 00 per annum.	Mar. 1, 1912.	May 10, 1912.	1	89.6	May 14, 1912.
Emma Barbara Diamond.....	Nurse, Head	50 00 per month.	July 25, 1912.	Aug. 15, 1912.	2	80.4	Oct. 25, 1912.
Rose E. Schaub.....	Nurse, Special	900 00 per annum.	Feb. 29, 1912.	April 18, 1912.	1	87.06	April 20, 1912.
Emma Nickum.....	Nurse, Supervising	1,200 00 per annum.	Feb. 29, 1912.	April 25, 1912.	1	75.4	April 30, 1912.
Theodore S. Baldwin.....	Painter	3 00 per day.	June 1, 1911.	Aug. 7, 1911.	1	97.	April 1, 1912.
Theodore E. Fredericks.....	Painter	3 00 per day.	Oct. 25, 1912.	Nov. 8, 1912.	8	82.2	Nov. 18, 1912.
Charles W. Holme.....	Painter	3 00 per day.	Oct. 25, 1912.	Nov. 8, 1912.	1	90.4	Nov. 12, 1912.
James Knoud.....	Painter	3 00 per day.	June 1, 1911.	Aug. 7, 1911.	9	93.7	April 10, 1912.
William H. Malone.....	Painter	3 00 per day.	Oct. 25, 1912.	Nov. 8, 1912.	9	82.2	Nov. 15, 1912.
Henry Weightman.....	Painter	3 00 per day.	Oct. 25, 1912.	Nov. 8, 1912.	4	88.8	Nov. 12, 1912.
George T. Faria.....	Physician, Assistant Resident	900 00 per annum.	Mar. 4, 1912.	Mar. 22, 1912.	3	76.	May 1, 1912.
William J. Harrison.....	Physician, Assistant Resident	800 00 per annum.	July 9, 1912.	July 22, 1912.	1	82.1	July 23, 1912.

Bureau of Health—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Clarence W. McCoubhay	Physician, Assistant Resident	\$90 00 per annum	Mar. 4, 1912	Mar. 22, 1912	1	81.	April 1, 1912.
Warren Stirling	Physician, Assistant Resident	\$90 00 per annum	July 9, 1912	July 22, 1912	2	79.6	July 24, 1912.
George T. Tyler	Physician, Assistant Resident	\$800 00 per annum	July 9, 1912	July 22, 1912	4	73.3	July 24, 1912.
Sadie Murdock	Stenographer and Typewriter	480 00 per annum	Mar. 21, 1912	April 19, 1912	15	80.92	Aug. 1, 1912.
Mary A. Sullivan	Stenographer and Typewriter	720 00 per annum	Mar. 21, 1912	April 19, 1912	7	80.84	April 29, 1912.
William H. Walsh	Superintendent	2,000 00 per annum	Feb. 16, 1912	Mar. 26, 1912	3	79.06	June 12, 1912.

BUREAU OF CHARITIES.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Frank Fetter	Baker	\$52 00 per month	April 11, 1912	May 8, 1911	3	91.1	April 2, 1912.
George Meeklang	Baker	75 00 per month	July 18, 1912	July 20, 1912	4	74.25	July 24, 1912.
William O. Schuler	Baker	52 00 per month	April 11, 1911	May 8, 1911	4	86.56	April 2, 1912.
Emil Sinner	Baker	52 00 per month	July 18, 1912	July 20, 1912	2	83.	July 24, 1912.
Emery H. Cole	Carpenter	3 20 per day	May 31, 1911	Aug. 7, 1911	7	89.2	Mar. 14, 1912.
Samuel T. Davis	Carpenter	3 20 per day	Oct. 14, 1912	Nov. 12, 1912	4	84.4	Dec. 2, 1912.
John J. Keenan	Carpenter	3 20 per day	Oct. 14, 1912	Nov. 12, 1912	1	89.5	Nov. 13, 1912.

Bureau of Charities—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Thomas F. Sears.....	C. printer	\$3 20 per day.....	May 31, 1911.....	Aug. 7, 1911.....	10	88.6	April 30, 1912.
James T. Young.....	C. printer	3 20 per day.....	May 31, 1911.....	Aug. 7, 1911.....	8	88.82	Mar. 18, 1912.
Marie A. Brown.....	Clerk	480 00 per annum.....	Mar. 15, 1912.....	April 24, 1912.....	16	98.23	June 7, 1912.
James F. Coffey.....	Clerk	800 00 per annum.....	Mar. 18, 1912.....	May 13, 1912.....	6	91.44	May 20, 1912.
Anna B. Eyre.....	Clerk	800 00 per annum.....	Mar. 18, 1912.....	May 13, 1912.....	3	91.71	May 17, 1912.
Florence W. Hart.....	Clerk	800 00 per annum.....	Mar. 18, 1912.....	May 13, 1912.....	7	90.99	May 17, 1912.
Paul A. Johns, Jr.....	Clerk	480 00 per annum.....	Mar. 15, 1912.....	April 24, 1912.....	27	91.25	Nov. 22, 1912.
Rose G. Stephen.....	Clerk	480 00 per annum.....	Mar. 15, 1912.....	April 24, 1912.....	14	93.65	May 20, 1912.
Helen L. Stoudt.....	Clerk	700 00 per annum.....	Mar. 15, 1912.....	April 24, 1912.....	6	95.20	July 23, 1912.
Annabel V. Thomas.....	Clerk	800 00 per annum.....	Mar. 18, 1912.....	May 13, 1912.....	8	90.95	May 20, 1912.
Nelle M. Tilley.....	Clerk	480 00 per annum.....	Mar. 15, 1912.....	April 24, 1912.....	1	98.95	May 8, 1912.
Emma Wainsley.....	Clerk	500 00 per annum.....	Mar. 15, 1912.....	April 24, 1912.....	5	95.33	May 9, 1912.
Emma Wels.....	Clerk	500 00 per annum.....	Mar. 15, 1912.....	April 24, 1912.....	26	91.41	Aug. 26, 1912.
Grover C. Zollers.....	Clerk	900 00 per annum.....	Mar. 18, 1912.....	May 13, 1912.....	35	87.73	Sept. 1, 1912.
William H. McOlune.....	Clerk, Assistant Storekeeper's	850 00 per annum.....	June 1, 1912.....	June 15, 1912.....	4	88.45	June 24, 1912.
Edward B. Penrose, Jr.....	Clerk, Miscellaneous	800 00 per annum.....	Mar. 18, 1912.....	May 13, 1912.....	14	90.18	June 1, 1912.
Ethel M. Phillips.....	Clerk, Miscellaneous	800 00 per annum.....	Mar. 18, 1912.....	May 13, 1912.....	23	88.58	Oct. 31, 1912.

Bureau of Charities—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Samuel Chase	Cook	\$85 00 per month.	Mar. 1, 1912	April 9, 1912	6	79.5	May 15, 1912.
John W. Monroe	Cook	720 00 per annum.	Mar. 1, 1912	April 9, 1912	4	86.5	May 10, 1912.
John Walters	Cook	35 00 per month.	Mar. 1, 1912	April 9, 1912	5	86.5	May 13, 1912.
Rufus H. Barber, Jr.	Cook, Assistant	35 00 per month.	April 12, 1911	May 3, 1911	2	90.68	Jan. 1, 1912.
William Lawhorn	Cook, Assistant	35 00 per month.	Dec. 18, 1912	Dec. 20, 1912	2	96.8	Dec. 26, 1912.
John McClarin	Cook, Assistant	500 00 per annum.	July 27, 1912	Aug. 12, 1912	7	74.1	Aug. 22, 1912.
Frank Wilson	Cook, Assistant	720 00 per annum.	July 27, 1912	Aug. 12, 1912	3	88.6	Aug. 19, 1912.
James P. Knorr	Driver (Ambulance)	720 00 per annum.	July 29, 1912	Aug. 6, 1912	1	96.05	Aug. 20, 1912.
Edwin R. Falloure	Druggist, Third Assistant	500 00 per annum.	July 10, 1912	July 31, 1912	1	84.5	Aug. 1, 1912.
Edward L. Brass	Engineer	50 00 per month.	Mar. 6, 1912	Mar. 28, 1912	2	80.12	April 1, 1912.
John McMahon, Jr.	Engineer	1,000 00 per annum.	Mar. 7, 1912	April 3, 1912	1	92.40	Nov. 18, 1912.
John Nolan	Engineer	1,000 00 per annum.	Mar. 7, 1912	April 3, 1912	11	70.76	May 7, 1912.
Joseph D. Barker	Engineer, Chief	1,500 00 per annum.	June 10, 1912	June 19, 1912	4	83.15	July 22, 1912.
James Grant	Engineer, Stationary	1,000 00 per annum.	Oct. 13, 1911	Nov. 28, 1911	9	71.26	Oct. 18, 1912.
Fremont Bowman	Farmer	1,200 00 per annum.	Mar. 14, 1912	April 30, 1912	3	77.8	May 1, 1912.
John H. Ashton	Farmer	45 00 per month.	July 13, 1912	July 20, 1912	5	86.8	July 20, 1912.
Jason T. Bowman	Farmer	40 00 per month.	July 13, 1912	July 20, 1912	3	89.6	July 20, 1912.

Bureau of Charities—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Benjamin Curry	Farmer	\$30 00 per month.	July 13, 1912.	July 20, 1912.	7	86.6	July 20, 1912.
Peter Eby	Farmer	30 00 per month.	July 13, 1912.	July 20, 1912.	1	91.6	July 20, 1912.
John L. Giffin	Farmer	30 00 per month.	July 13, 1912.	July 20, 1912.	6	86.8	July 20, 1912.
David M. Johnston	Farmer	30 00 per month.	July 13, 1912.	July 20, 1912.	18	78.2	July 20, 1912.
Joseph Lanahan	Farmer	35 00 per month.	July 13, 1912.	July 20, 1912.	9	85.7	July 20, 1912.
William F. Lawler	Farmer	40 00 per month.	July 13, 1912.	July 20, 1912.	4	88.5	July 20, 1912.
George Long	Farmer	30 00 per month.	July 13, 1912.	July 20, 1912.	17	78.2	July 20, 1912.
John McGrath	Farmer	35 00 per month.	July 13, 1912.	July 20, 1912.	8	86.6	July 20, 1912.
Frank Mills	Farmer	30 00 per month.	July 13, 1912.	July 20, 1912.	12	85.1	July 20, 1912.
Edward E. Reckless	Farmer	30 00 per month.	Dec. 7, 1912.	Dec. 17, 1912.	1	87.8	Dec. 20, 1912.
Patrick Ryan	Farmer	30 00 per month.	July 13, 1912.	July 20, 1912.	11	85.5	July 20, 1912.
Ernest E. Snyder	Farmer	60 00 per month.	July 13, 1912.	July 20, 1912.	2	88.8	July 20, 1912.
Albert H. States	Farmer	35 00 per month.	July 13, 1912.	July 20, 1912.	16	80.9	July 20, 1912.
Frank O. Thornton	Farmer	30 00 per month.	July 13, 1912.	July 20, 1912.	14	82.8	July 20, 1912.
John Widemas	Farmer	40 00 per month.	July 13, 1912.	July 20, 1912.	10	85.7	July 20, 1912.
John F. Wood	Farmer	30 00 per month.	July 13, 1912.	July 20, 1912.	19	77.6	July 20, 1912.
Patrick Ouran	Fireman	40 00 per month.	Mar. 14, 1912.	April 9, 1912.	8	85.2	June 20, 1912.

Bureau of Charities—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Lillian Elliott	Forewoman of Laundry	\$17 50 per month	Oct. 17, 1912	Nov. 1, 1912	2	78.4	Nov. 1, 1912.
Mary A. Keenan	Forewoman of Laundry	10 00 per month	July 23, 1912	Aug. 7, 1912	1	85.	Aug. 7, 1912.
Oathrine Vanderheyden	Forewoman of Laundry	17 50 per month	Oct. 17, 1912	Nov. 1, 1912	1	85.2	Nov. 1, 1912.
William F. Robinson	Foreman of Stables	800 00 per annum	July 5, 1912	July 18, 1912	8	88.6	July 24, 1912.
Helen G. Bruner	Housekeeper	600 00 per annum	Oct. 17, 1912	Nov. 1, 1912	2	92.7	Nov. 1, 1912.
Lucian Beeche	Interne	No salary	Mar. 23, 1912	April 23, 1912	84	72.6	Mar. 15, 1912.
Russell S. Boies	Interne	No salary	Mar. 23, 1912	April 23, 1912	40	79.68	May 15, 1912.
Blinn A. Buell	Interne	No salary	Mar. 23, 1912	April 23, 1912	21	82.76	Dec. 15, 1912.
Edw. W. Collins	Interne	No salary	Mar. 23, 1912	April 23, 1912	19	82.8	Oct. 1, 1912.
Jno. H. Doane	Interne	No salary	Mar. 23, 1912	April 23, 1912	9	86.48	July 1, 1912.
Arthur T. Eaton	Interne	No salary	Mar. 23, 1912	April 23, 1912	23	82.32	Oct. 1, 1912.
Louis Lehrfeld	Interne	No salary	Mar. 23, 1912	April 23, 1912	3	92.48	Aug. 15, 1912.
Jno. B. Monihan	Interne	No salary	Mar. 23, 1912	April 23, 1912	13	85.28	July 1, 1912.
Orrill P. O'Boyle	Interne	No salary	Mar. 23, 1912	April 23, 1912	27	81.28	Aug. 15, 1912.
Jack Pearl	Interne	No salary	Mar. 23, 1912	April 23, 1912	18	83.12	Nov. 15, 1912.
Harry Rubin	Interne	No salary	Mar. 23, 1912	April 23, 1912	11	85.44	May 15, 1912.
A. J. Sullivan	Interne	No salary	Mar. 23, 1912	April 23, 1912	22	82.72	Oct. 1, 1912.

Bureau of Charities—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William S. Wentzel	Interne	No salary	Mar. 23, 1912	April 23, 1912	7	88.92	July 1, 1912.
Mary E. Convery	Laundress	20 00 per month.	July 25, 1912	Aug. 3, 1912	2	83.5	Aug. 4, 1912.
Margaret Daley	Laundress	17 66 per month.	Oct. 17, 1912	Nov. 1, 1912	1	87.7	Nov. 1, 1912.
Mary Grady	Laundress	20 00 per month.	July 25, 1912	Aug. 3, 1912	1	92.9	Aug. 4, 1912.
Beatrice S. Sisley	Laboratory Worker	30 00 per month.	Oct. 31, 1912	Nov. 13, 1912	1	97.5	Nov. 14, 1912.
Joseph J. John	Manager of Laundry	1,200 00 per annum.	Mar. 1, 1912	May 10, 1912	3	81.6	June 1, 1912.
James S. Holcombe	Machine Laundryman	50 00 per month.	Oct. 23, 1912	Nov. 13, 1912	1	83.	Nov. 14, 1912.
George Archibald	Machinist	3 50 per day	Mar. 8, 1912	April 25, 1912	1	97.1	Aug. 8, 1912.
Florence H. Stuckert	Musical Instructor	35 00 per month.	Feb. 29, 1912	April 2, 1912	1	76.08	April 1, 1912.
Elizabeth F. Deuce	Nurse, Head	30 00 per month.	Feb. 29, 1912	April 18, 1912	1	91.71	May 1, 1912.
Anna M. Dunlevy	Nurse, Head	30 00 per month.	July 25, 1912	Aug. 15, 1912	4	86.45	Aug. 16, 1912.
Sue M. Earley	Nurse, Head	35 00 per month.	Feb. 29, 1912	April 18, 1912	8	74.75	May 1, 1912.
Stella M. Hall	Nurse, Head	40 00 per month.	Feb. 29, 1912	April 18, 1912	6	78.85	May 1, 1912.
Marie L. Leidhecker	Nurse, Head	\$50 00 per month.	Feb. 29, 1912	April 18, 1912	2	83.52	May 1, 1912.
Maud E. Lyle	Nurse, Head	35 00 per month.	July 25, 1912	Aug. 15, 1912	1	97.9	Aug. 16, 1912.
Elizabeth Miller	Nurse, Head	30 00 per month.	Feb. 29, 1912	April 18, 1912	7	75.92	May 1, 1912.
Lillian B. Noone	Nurse, Head	25 00 per month.	July 25, 1912	Aug. 15, 1912	2	95.9	Aug. 16, 1912.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Mary A. O'Neill.....	Nurse, Head.....	\$5 00 per month.....	Feb. 23, 1912.....	April 18, 1912.....	5	80.7	May 1 1912.
Blanche E. Rose.....	Nurse, Head.....	\$0 00 per month.....	July 25, 1912.....	Aug. 15, 1912.....	3	80.2	Aug. 16, 1912.
Esther W. Taylor.....	Nurse, Head.....	\$0 00 per month.....	Feb. 29, 1912.....	April 18, 1912.....	9	73.81	May 1, 1912.
Sadie B. Yarnall.....	Office Assistant.....	\$40 00 per annum.....	Mar. 15, 1912.....	April 24, 1912.....	61	78.84	June 14, 1912.
Chancellor Day.....	Overseer.....	\$1,200 00 per annum.....	Mar. 1, 1912.....	April 10, 1912.....	3	80.2	April 23, 1912.
Robert L. Anderson.....	Painter.....	\$ 00 per day.....	June 1, 1911.....	Aug. 7, 1911.....	11	82.6	April 26, 1912.
Thomas A. Goodes.....	Painter.....	\$ 00 per day.....	June 1, 1911.....	Aug. 7, 1911.....	15	80.6	July 15, 1912.
Amos K. Grissim.....	Painter.....	\$ 00 per day.....	June 1, 1911.....	Aug. 7, 1911.....	14	91.	July 6, 1912.
Morris Klein.....	Painter.....	\$ 00 per day.....	June 1, 1911.....	Aug. 7, 1911.....	7	84.1	Aug. 7, 1912.
Albert S. Krewson.....	Painter.....	\$ 00 per day.....	June 1, 1911.....	Aug. 7, 1911.....	5	84.2	Mar. 23, 1912.
John K. Lindsay.....	Painter.....	\$ 00 per day.....	June 1, 1911.....	Aug. 7, 1911.....	3	85.8	April 15, 1912.
George J. Sahn.....	Painter.....	\$ 00 per day.....	June 1, 1911.....	Aug. 7, 1911.....	2	86.46	April 3, 1912.
Robert B. Seddenger.....	Painter.....	\$ 00 per day.....	June 1, 1911.....	Aug. 7, 1911.....	12	91.8	April 26, 1912.
Joseph F. Hilly.....	Physician, Asst. Chief Resident.....	\$1,200 00 per annum.....	Sept. 30, 1912.....	Oct. 16, 1912.....	1	88.15	Oct. 17, 1912.
Israel Binder.....	Physician, Assistant Clinical.....	\$60 00 per annum.....	Sept. 30, 1912.....	Oct. 14, 1912.....	5	76.8	Oct. 25, 1912.
Leonard Rattery.....	Physician, Assistant Clinical.....	\$80 00 per annum.....	Oct. 3, 1912.....	Oct. 14, 1912.....	1	78.3	Oct. 15, 1912.
Hymen Laveon.....	Physician, Assistant Clinical.....	\$60 00 per annum.....	Sept. 30, 1912.....	Oct. 14, 1912.....	2	77.3	Oct. 22, 1912.
Frank Sveraky.....	Physician, Assistant Clinical.....	\$60 00 per annum.....	Sept. 30, 1912.....	Oct. 14, 1912.....	4	83.2	Dec. 20, 1912.
Thomas B. Kern.....	Physician, Assistant, Insane Dept.....	\$80 00 per annum.....	July 11, 1912.....	July 24, 1912.....	2	85.75	Oct. 3, 1912.
Edward A. McInane.....	Physician, Assistant, Insane Dept.....	\$1,000 00 per annum.....	Mar. 4, 1912.....	April 12, 1912.....	1	76.	April 12, 1912.
John O. Miller.....	Physician, Assistant, Insane Dept.....	\$80 00 per annum.....	Mar. 4, 1912.....	April 12, 1912.....	3	74.	April 12, 1912.

Bureau of Charities—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Leonard Baffery	Physician, Assistant, Insane Dept.	800 00 per annum.	Dec. 13, 1912.	Dec. 20, 1912.	2	84.5	Dec. 21, 1912.
Ernest F. Apeldorn	Physician, Outdoor	360 00 per annum.	Mar. 4, 1912.	Mar. 29, 1912.	16	73.33	June 26, 1912.
Albion C. Bease	Physician, Outdoor	360 00 per annum.	Mar. 4, 1912.	Mar. 29, 1912.	10	79.86	June 20, 1912.
S. Oulford Boston	Physician, Outdoor	360 00 per annum.	Mar. 4, 1912.	Mar. 29, 1912.	15	75.86	June 25, 1912.
John C. Hungerbuehler	Physician, Outdoor	360 00 per annum.	Mar. 4, 1912.	Mar. 29, 1912.	5	81.66	April 25, 1912.
Morris Markowitz	Physician, Outdoor	360 00 per annum.	Mar. 4, 1912.	Mar. 29, 1912.	11	78.66	June 20, 1912.
William F. Kelly	Physician, Outdoor	360 00 per annum.	Mar. 4, 1912.	Mar. 29, 1912.	9	80.13	May 15, 1912.
Berton C. Truitt	Physician, Outdoor	360 00 per annum.	Mar. 4, 1912.	Mar. 29, 1912.	3	86.	April 1, 1912.
James D. Schofield	Physician, Outdoor	360 00 per annum.	Mar. 4, 1912.	Mar. 29, 1912.	6	81.06	May 7, 1912.
Thomas Clark, Jr.	Plumber	\$3 00 per day.	June 6, 1911.	July 29, 1911.	2	92.2	Feb. 9, 1912.
William C. Hess	Plumber	3 00 per day.	Sept. 9, 1912.	Sept. 13, 1912.	10	91.	Dec. 2, 1912.
Albert Hall	Special Officer	800 00 per annum.	Feb. 28, 1912.	April 16, 1912.	7	96.8	June 25, 1912.
John Kerwick	Special Officer	800 00 per annum.	Feb. 28, 1912.	April 16, 1912.	37	93.3	Aug. 19, 1912.
William S. Powell	Special Officer	480 00 per annum.	Mar. 11, 1912.	April 23, 1912.	1	96.8	May 7, 1912.
Sterling C. Rex	Special Officer	800 00 per annum.	Feb. 28, 1912.	April 16, 1912.	16	96.1	July 15, 1912.
Wilmer J. Windsor	Special Officer	800 00 per annum.	Feb. 28, 1912.	April 16, 1912.	2	98.	May 15, 1912.
Jacob Geler	Steamfitter	3 00 per day.	Sept. 9, 1912.	Sept. 19, 1912.	2	94.	Oct. 10, 1912.
Julius L. Sahms	Steamfitter	3 00 per day.	Sept. 9, 1912.	Sept. 19, 1912.	7	87.6	Oct. 25, 1912.
Thomas J. Shearman	Steamfitter	3 00 per day.	June 2, 1911.	July 10, 1911.	2	86.4	Mar. 25, 1912.
Lottie M. Sturma	Stenographer	540 00 per annum.	Mar. 2, 1911.	Mar. 29, 1911.	3	88.49	Jan. 1, 1912.
Mary A. Brady	Stenographer	480 00 per annum.	Mar. 21, 1912.	April 19, 1912.	8	89.06	May 21, 1912.

Bureau of Charities—Continued.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Helen D. Young	Stenographer and Clerk	600 00 per annum	Mar. 21, 1912	April 19, 1912	1	93.7	April 29, 1912.
James F. Coffey	Storekeeper	1,400 00 per annum	July 9, 1912	July 23, 1912	1	93.5	Sept. 1, 1912.
Daniel W. Seltzer	Superintendent	3,000 00 per annum	Feb. 16, 1912	Mar. 26, 1912	1	93.6	April 2, 1912.
Frank O. Orismond	Thsmith	2 80 per day	July 12, 1912	July 20, 1912	4	92.2	Nov. 14, 1912.
Albert Bennecoff	Watchman	480 00 per annum	Mar. 11, 1912	April 23, 1912	4	93.4	May 7, 1912.
David T. McMillan	Watchman, Assistant	400 00 per annum	Mar. 11, 1912	April 23, 1912	3	93.5	Dec. 5, 1912.
William Moore	Watchman, Assistant	400 00 per annum	Mar. 11, 1912	April 23, 1912	6	94.4	July 19, 1912.

DEPARTMENT OF WHARVES, DOCKS AND FERRIES.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
George W. Hney, Jr.	Insp., Asst. Masonry and Coner	\$900 00 per annum	Feb. 28, 1912	May 10, 1912	4	88.9	Aug. 23, 1912.
Heber James	Insp., Asst. Masonry and Coner	900 00 per annum	Feb. 28, 1912	May 10, 1912	1	90.5	Sept. 3, 1912.
James Stewart	Inspector, Dock Dredging	1,000 00 per annum	June 6, 1911	Aug. 1, 1911	2	82.2	Aug. 1, 1912.
Edwin M. Luckenbach	Inspector, Steel	1,800 00 per annum	Feb. 28, 1912	May 10, 1912	2	89.5	May 13, 1912.
William E. Amaler	Notice Server	900 00 per annum	June 7, 1912	June 24, 1912	2	93.45	July 29, 1912.
Celia Frank	Stenographer and Typewriter	900 00 per annum	Mar. 22, 1912	April 19, 1912	7	89.79	May 2, 1912.

CIVIL SERVICE COMMISSION.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
William Brantz	Clerk	\$800 00 per annum.	Mar. 18, 1912	May 13, 1912	24	89.08	June 27, 1912.
Frederic D. Garman	Clerk	900 00 per annum.	Mar. 18, 1912	May 13, 1912	26	88.8	Aug. 5, 1912.
William B. Githens	Clerk	720 00 per annum.	Mar. 15, 1912	April 24, 1912	10	94.43	May 9, 1912.
Charles L. Hafner	Clerk	1,100 00 per annum.	Mar. 19, 1912	May 13, 1912	8	90.79	May 20, 1912.
Charles J. McLaughlin	Clerk	900 00 per annum.	Mar. 18, 1912	May 13, 1912	21	89.43	June 27, 1912.
William B. Pike	Clerk	1,000 00 per annum.	Mar. 19, 1912	May 13, 1912	2	91.72	May 25, 1912.
John A. Smith	Clerk	\$800 00 per annum.	Mar. 18, 1912	May 13, 1912	20	89.45	June 27, 1912.
Samuel B. White	Clerk	900 00 per annum.	Mar. 18, 1912	May 13, 1912	22	91.55	June 12, 1912.
William H. Wolter	Clerk	900 00 per annum.	Mar. 18, 1912	May 13, 1912	41	87.55	Sept. 14, 1912.
Herbert F. Mitchell	Clerk, Chief	2,400 00 per annum.	Mar. 2, 1912	April 1, 1912	1	90.39	April 25, 1912.
James K. Coyne	Examiner, Assistant	1,800 00 per annum.	May 25, 1912	June 5, 1912	2	73.18	July 1, 1912.
Louis J. Dempsey	Examiner, Assistant	1,800 00 per annum.	May 25, 1912	June 5, 1912	3	72.93	July 10, 1912.
James Gilmore	Examiner, Assistant	1,800 00 per annum.	May 25, 1912	June 5, 1912	1	76.25	June 17, 1912.
Arthur M. Swanson	Examiner, Chief	2,400 00 per annum.	May 25, 1912	June 5, 1912	1	89.4	June 26, 1912.
J. Clinton Foltz	Examiner, Assistant Medical	900 00 per annum.	June 4, 1912	June 14, 1912	4	84.95	July 1, 1912.
William K. Muller	Examiner, Medical	1,600 00 per annum.	June 4, 1912	June 14, 1912	1	87.7	June 21, 1912.
Florence G. Clouds	Stenographer and Typewriter	720 00 per annum.	Mar. 21, 1912	April 19, 1912	2	92.09	June 1, 1912.

Civil Service Commission—Continued.

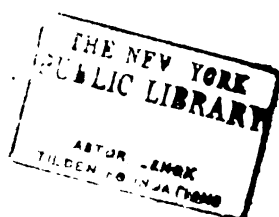
Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Kathryn G. Doughan.....	Stenographer and Typewriter.....	720 00 per annum.....	Mar. 21, 1912.....	April 19, 1912.....	6	90.14	May 1, 1912.
Anna R. Eyre.....	Stenographer and Typewriter.....	720 00 per annum.....	Mar. 21, 1912.....	April 19, 1912.....	5	90.6	May 1, 1912.
Pauline R. Goetz.....	Stenographer and Typewriter.....	900 00 per annum.....	Mar. 22, 1912.....	April 19, 1912.....	3	92.46	May 1, 1912.
Ella H. Hall.....	Stenographer and Typewriter.....	900 00 per annum.....	Mar. 22, 1912.....	April 19, 1912.....	4	91.08	May 1, 1912.
Marcus M. Mathias.....	Stenographer and Typewriter.....	1,000 00 per annum.....	Mar. 25, 1912.....	April 19, 1912.....	15	88.43	June 3, 1912.
Amelia H. Syren.....	Stenographer and Typewriter.....	900 00 per annum.....	Mar. 22, 1912.....	April 19, 1912.....	14	86.94	June 1, 1912.
R. L. Wattenberg.....	Investigator.....	1,200 00 per annum.....	June 6, 1912.....	July 19, 1912.....	1	87.05	Aug. 3, 1912.

DEPARTMENT OF LAW.

Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Michael F. Donnelly.....	Cashier.....	\$1,800 00 per annum.....	May 29, 1912.....	July 25, 1912.....	2	90.2	Aug. 1, 1912.
Albert G. Austin.....	Clerk.....	1,200 00 per annum.....	Mar. 19, 1912.....	May 13, 1912.....	6	91.38	May 25, 1912.
Joseph Flaherty.....	Clerk.....	1,500 00 per annum.....	Mar. 20, 1912.....	April 24, 1912.....	1	93.05	May 20, 1912.
D. Irvin Fulton.....	Clerk.....	1,400 00 per annum.....	Mar. 20, 1912.....	April 24, 1912.....	5	88.04	June 6, 1912.
James J. McGettigan.....	Clerk.....	1,200 00 per annum.....	Mar. 19, 1912.....	May 13, 1912.....	4	91.05	May 25, 1912.

Department of Law—Continued.

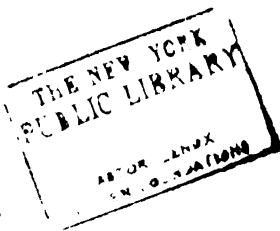
Name.	Position.	Salary.	Date of examination.	Date of publication of list.	Position on list.	Average.	Date of appointment.
Richard T. McSorley.	Clerk	1,400 00 per annum.	Mar. 20, 1912.	April 24, 1912.	7	88.15	May 20, 1912.
George W. Nill.	Custodian	1,000 00 per annum.	June 5, 1912.	June 18, 1912.	8	91.	Aug. 5, 1912.
Rose M. Gallen.	Janitress	420 00 per annum.	Mar. 12, 1912.	April 17, 1912.	7	94.86	May 15, 1912.
Thomas L. Fishmuth.	Messenger	1,000 00 per annum.	Mar. 5, 1912.	April 23, 1912.	6	98.6	Sept. 16, 1912.
Louis A. Kelly.	Messenger	1,000 00 per annum.	Mar. 5, 1912.	April 23, 1912.	5	98.8	May 24, 1912.
Ralph A. Dungan.	Special Evidence Agent.	1,500 00 per annum.	June 6, 1912.	July 18, 1912.	4	98.05	Aug. 1, 1912.
Bertha Bray	Stenographer and Typewriter.	1,250 00 per annum.	Mar. 26, 1912.	April 19, 1912.	1	90.68	May 17, 1912.
Edward St. G. Joyce.	Stenographer and Typewriter.	1,250 00 per annum.	Mar. 26, 1912.	April 19, 1912.	4	88.05	May 15, 1912.
William O. Kilpatrick.	Stenographer and Clerk.	1,250 00 per annum.	Mar. 26, 1912.	April 19, 1912.	5	78.85	Aug. 23, 1912.
Benjamin H. Linton.	Stenographer and Clerk.	1,250 00 per annum.	July 18, 1912.	Aug. 5, 1912.	15	70.4	Aug. 23, 1912.
Elmer S. Myers.	Stenographer and Clerk.	1,250 00 per annum.	July 18, 1912.	Aug. 5, 1912.	6	80.9	Sept. 1, 1912.
William J. Bartlett.	Writ Server	1,000 00 per annum.	June 7, 1912.	June 24, 1912.	1	93.4	Sept. 24, 1912.
William J. McIntyre.	Writ Server	1,000 00 per annum.	June 7, 1912.	June 24, 1912.	5	89.	Dec. 30, 1912.
Nathaniel G. Taylor.	Writ Server	1,000 00 per annum.	June 7, 1912.	June 24, 1912.	4	86.75	Sept. 25, 1912.
John Stanley Urquhart.	Writ Server	1,000 00 per annum.	June 7, 1912.	June 24, 1912.	6	85.1	Dec. 30, 1912.



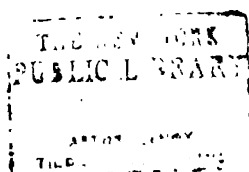
Name	Date of appointment
MAYOR'S OFFICE.	
BOARD OF RECREATION	
Richard F. Marter.....	Aug. 30, 1912
Chas F. Augustine.....	July 16, 1912
DEPARTMENT OF PUBLIC SAFETY.	
BUREAU OF POLICE	
Wm. P. Brown.....	July 29, 1912
Geo. W. Smiley.....	Aug. 21, 1912
Jas. W. Ledlie.....	Aug. 21, 1912
Thos. F. Morrison.....	July 8, 1912
BOARD OF CITY PROPERTY	
Wm. H. Mercil.....	Dec. 16, 1912
BUREAU OF ELEVATOR INSPECTION	
Jno. O. Rosengarten.....	Sept. 26, 1912
Henry Oscar Smith.....	June 25, 1912
DEPARTMENT OF PUBLIC WORKS.	
BUREAU OF HIGHWAYS AND STREET CLEANING	
Elwood Hipple.....	Aug. 3, 1912
BOARD OF HIGHWAY SUPERVISORS.	
Edw. W. Fontaine.....	June 20, 1912
BUREAU OF SURVEYS	
E. H. Dunn.....	Nov. 9, 1912
Chas. H. Hill.....	June 12, 1912
E. F. Thuring.....	July 16, 1912
Wm. E. Ahles.....	June 20, 1912
H. W. Farrand.....	Nov. 16, 1912
Rich	Nath
Geor	John
Rose	
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Lou	
Ralph	
Bert	
Edw	
Will	
Ben	
Elm	
Will	
Will	

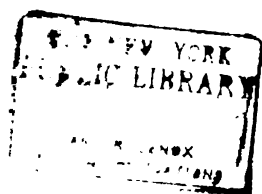
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II. COMPETITIVE CLASS.

PROMOTIONS.

Exclusive of Promotions, less than \$200, as permitted by
Rule XII, Section III, Revised.

The Summary.

OFFICE OF THE MAYOR	0
Mayor's Office	0
Bureau of Contracts and Statistics	0
Bureau of Comprehensive Plans	0
Board of Recreation	0
Public Aquarium	0
City Planning Exhibition	0
DEPARTMENT OF PUBLIC SAFETY	85
Director's Office	0
Bureau of Police	45
Fire Marshal's Office	0
Bureau of Fire	39
Electrical Bureau	1
Bureau of City Property	0
Bureau of Building Inspection	0
Bureau of Boiler Inspection	0
Bureau of Correction	0
Bureau of Elevator Inspection	0
DEPARTMENT OF PUBLIC WORKS	7
Director's Office	0
Bureau of Highways and Street Cleaning	0
Board of Highway Supervisors	0
Bureau of Lighting	0
Bureau of Gas	0
Bureau of Surveys	7
Bureau of Water	0
DEPARTMENT OF SUPPLIES	1
DEPARTMENT OF PUBLIC HEALTH AND CHARITIES.....	1
Director's Office	0
Bureau of Health	1
Bureau of Charities	0
DEPARTMENT OF WHARVES, DOCKS AND FERRIES	0
CIVIL SERVICE COMMISSION	0
DEPARTMENT OF LAW	0
Total	94

III.
COMPETITIVE CLASS.
PROVISIONAL APPOINTMENTS.

The Summary.

OFFICE OF THE MAYOR	76
Mayor's Office	0
Bureau of Contracts and Statistics	0
Bureau of Comprehensive Plans	2
Board of Recreation	74
Public Aquarium	0
City Planning Exhibition	0
DEPARTMENT OF PUBLIC SAFETY	109
Director's Office	1
Bureau of Police	19
Fire Marshal's Office	5
Bureau of Fire	12
Electrical Bureau	14
Bureau of City Property	42
Bureau of Building Inspection	2
Bureau of Boiler Inspection	1
Bureau of Correction	4
Bureau of Elevator Inspection	9
DEPARTMENT OF PUBLIC WORKS	172
Director's Office	8
Bureau of Highways and Street Cleaning	60
Board of Highway Supervisors	1
Bureau of Lighting	4
Bureau of Gas	1
Bureau of Surveys	44
Bureau of Water	54
DEPARTMENT OF SUPPLIES	5
DEPARTMENT OF PUBLIC HEALTH AND CHARITIES	193
Director's Office	1
Bureau of Health	69
Bureau of Charities	123
DEPARTMENT OF WHARVES, DOCKS AND FERRIES	8
CIVIL SERVICE COMMISSION	25
DEPARTMENT OF LAW	17
Total	605

PROVISIONAL EXAMINATIONS AND APPOINTMENTS.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.			
						Number of applicants.	Number attending.	Number permanently appointed.	Number falling.
MAYOR'S OFFICE									
BUREAU OF COMPREHENSIVE PLANS									
Assistant Engineer	\$3,600	1	1	0	147	0	0	0	0
Secretary	2,500	1	1	0	305	1	1	0	1
BOARD OF RECREATION									
Caretaker	60 mo.	2	2	0	96	2	2	1	0
Inspector	125 mo.	1	1	0	59	0	0	0	0
Piano Player	.50 hour	1	1	0	90	No competitive examination			
Principal	1,200	4	4	0	83	4	1	1	0
Teacher	80 mo.	19	19	0	110	19	9	4	5
Teacher, Assistant	65 mo.	45	45	0	114	45	19	7	12
Teacher, Substitute Assistant	65 mo.	2	2	0	134	2	0	0	0
DEPARTMENT OF PUBLIC SAFETY									
DIRECTOR'S OFFICE									
Secretary to Director	2,400	1	1	0	63	0	0	0	By exemption 1

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.			
						Number of applicants.	Number attending.	Number permanently appointed.	Number failing.
BUREAU OF POLICE									
Cleaner -----	\$25 mo.	3	3	0	63	3	3	1	0
Clerk, Station House -----	900	1	1	0	53	1	1	0	1
Drillmaster -----	1,800	1	1	0	64	1	1	1	0
Driver, Van -----	900	1	1	0	153	1	1	0	0
District Surgeon -----	Fees	1	1	0	108	1	1	1	0
Engineer on Boat -----	1,200	1	1	0	836	1	1	0	1
Hostler -----	720	5	5	0	110	5	5	3	2
Matron -----	720	1	1	0	52	1	0	0	0
Photographer, Assistant -----	1,200	2	2	0	74	2	1	1	0
Secretary -----	1,800	2	2	0	96	0	0	Promoted	0
Superintendent of Horses -----	1,800	1	1	0	154	1	1	0	1
FIRE MARSHAL'S OFFICE									
Fire Marshal, Assistant -----	2,000	1	1	0	208	1	1	0	1
Inspector -----	1,200	4	4	0	171	4	4	2	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.			
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.
BUREAU OF FIRE									
Cleaner	\$25 mo.	2	2	0	78	2	2	1	0
Engineer, Second Assistant	1,500	1	1	0	122	1	1	1	0
Inspector	1,000	3	2	1	75	2	2	1	1
Machinist	1,000	1	1	0	101	1	1	0	0
Pilot	1,250	1	1	0	144	1	1	1	0
Pipe Inspector	1,000	1	1	0	106	1	1	0	1
Rodman	720	1	0	1	0	0	0	0	0
Superintendent of Repair Shop	1,800	1	1	0	110	1	1	0	1
Veterinary Surgeon	2,000	1	1	0	153	1	1	1	0
ELECTRICAL BUREAU									
Chief	6,000	1	1	0	154	1	1	1	0
Clerk, Index	1,200	1	1	0	85	0	0	0	0
Climber	8 day	1	1	0	25	1	1	1	0
Dynamoman	1,200	1	1	0	177	1	1	0	1

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.			
						Number of applicants attending.	Number passing.	Number permanently appointed.	Number failing.
ELECTRICAL BUREAU—Continued.									
Elevator Operator	2 75 d.	3	3	0	73	3	2	2	0
Elevator Starter	3 day	1	1	0	132	1	1	1	1
Lineman	1,100	2	2	0	89	2	1	1	0
Pole Inspector	4 day	1	1	0	93	1	1	0	0
Pumpman	3 day	1	1	0	143	1	1	1	1
Stenographer and Typewriter	1,200	1	1	0	33	1	1	1	0
Wireman	1,000	1	1	0	144	1	1	0	1
BUREAU OF CITY PROPERTY									
Foreman of Laborers	c 85 d.	2	1	1	31	1	1	0	0
Guard, Independence Hall	720	2	2	0	50	1	0	0	0
Janitor of Court	720	1	1	0	60	0	0	0	0
Janitress	1 75 d.	1	1	0	84	1	1	1	0
Lavatory Attendant	2 day	5	5	0	115	5	3	3	0
Rigger	3 60 d.	1	1	0	123	1	1	1	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.			
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.
BUREAU OF CITY PROPERTY—Continued									
Superintendent of Bath House	\$600	4	4	0	84	4	4	4	0
Superintendent of City Hall, Assistant	2,000	1	1	0	135	1	1	0	1
Superintendent of Independence Hall	800	1	1	0	22	0	0	0	0
Superintendent of Real Estate	1,500	1	1	0	85	1	1	0	1
Superintendent of Square	800	9	9	0	31	9	7	4	0
Sweeper and Cleaner	2 day	14	14	0	119	14	13	13	1
BUREAU OF BUILDING INSPECTION									
Inspector of Buildings	2,000	2	2	0	101	2	2	2	0
BUREAU OF BOILER INSPECTION									
Smoke Inspector	1,200	1	1	0	202	1	1	1	0
BUREAU OF CORRECTION									
Baker	900	1	1	0	17	0	0	0	0
Bookkeeper, Second Assistant	720	1	1	0	132	1	1	1	0
Foreman of Tailors	900	1	1	0	73	1	1	1	1
Matron, Assistant	360	1	1	0	133	1	1	1	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.				
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.	Number failing.
BUREAU OF ELEVATOR INSPECTION										
Clerk	\$1,100	2	2	0	77	2	2	0	0	2
Chief Inspector	3,500	1	1	0	176	1	1	1	1	0
District Inspector	1,100	4	4	0	50	4	4	3	2	1
Elevator Inspector	1,200	1	1	0	78	1	1	1	1	0
Messenger	700	1	1	0	70	1	1	1	0	0
DEPARTMENT OF PUBLIC WORKS										
DIRECTOR'S OFFICE										
Blue Printer	600	1	1	0	163	1	1	1	0	0
Engineer, Assistant	1,500	1	1	0	122	0	0	0	0	0
Engineer, Assistant	2,500	1	0	1	0	0	0	0	0	0
Entomologist	1,300	1	1	0	102	1	1	1	1	0
Inspector, Special	2,500	1	1	0	82	1	1	1	1	0
Stenographer	13 wk.	1	1	0	30	0	0	0	0	0
Stenographer and Clerk	1,100	1	1	0	71	1	1	1	0	0
Telephone Operator	40 mo.	1	1	0	132	1	1	1	1	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.				
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.	Number failing.
BUREAU OF HIGHWAYS AND STREET CLEANING										
Assistant Chief	\$3,000	1	1	0	198	1	1	1	1	0
Chief	6,000	1	1	0	53	1	1	1	1	0
Chief Clerk	2,800	2	2	0	114	2	1	0	0	1
Clerk, Miscellaneous	900	1	1	0	81	1	1	0	0	1
Clerk, Reference and Complaint	1,000	1	1	0	60	1	1	1	0	0
Engineer, Assistant	3,600	2	2	0	122	2	2	2	2	0
Engineer, Portable Roller	3 50 d.	9	9	0	58	3	2	2	2	0
Foreman of Bridge Repairs	1,200	1	1	0	124	1	1	1	1	0
Foreman of Drainage Operations	1,200	2	2	0	91	1	1	1	1	0
Foreman of Macadam Roads	100	8	8	0	188	7	7	3	0	4
General Inspector	1,800	1	1	0	222	0	0	0	0	0
Inspector of Highways	1,300	17	17	0	103	17	17	14	10	3
Inspector of Street Cleaning	1,800	1	1	0	165	1	1	1	0	0
Inspector of Sewer Repairs	1,300	1	1	0	88	1	1	1	0	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.			
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.
BUREAU OF HIGHWAYS AND STREET CLEANING—Continued									
Messenger	\$800	1	1	0	34	1	0	0	0
Paver	3 75 d.	1	1	0	86	1	1	1	0
Paymaster	1,200	1	1	0	257	1	1	1	0
Rammer	3 15 d.	3	3	0	29	3	3	1	2
Sewer Inspector	1,300	1	1	0	181	1	1	1	0
Special Inspector	1,500	1	1	0	175	1	1	1	0
Special Inspector, Railway Streets	1,500	2	2	0	83	2	0	0	0
Stenographer and Clerk	900	1	1	0	90	1	1	1	0
Superintendent of Bridges, Assistant	1,500	1	1	0	236	1	1	1	0
BOARD OF HIGHWAY SUPERVISORS									
Draftsman	800	1	0	1	0	0	0	0	0
BUREAU OF LIGHTING									
Chief	2,000	1	1	0	212	1	1	1	0
Inspector	1,000	3	3	0	116	3	2	2	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.				
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.	Number failing.
BUREAU OF GAS										
Chief Inspector of Meters	\$5,000	1	1	0	71	0	0	0	0	0
BUREAU OF SURVEYS										
Apprentice	30	2	2	0	55	1	1	1	1	0
Chainman	40	3	3	0	53	3	3	3	2	0
Chemist, Assistant	13	1	1	0	122	1	1	1	1	0
Draftsman	1,200	1	1	0	163	1	0	0	0	0
Draftsman	1,500	2	2	0	127	2	1	1	1	0
Draftsman	41 hr.	1	1	0	111	1	1	1	0	0
Draftsman, Electrical	30 hr.	1	1	0	1	1	1	1	1	0
Draftsman, Engineering	45c. & 50c. hr.	2	1	1	154	1	1	0	0	1
Draftsman, Map	35	1	1	0	66	1	1	1	0	0
Draftsman, Railway	900	1	1	0	41	1	0	0	0	0
Engineer, Assistant	3,000	1	1	0	202	1	1	1	1	0
Engineer, Assistant	2,400	1	1	0	155	1	1	1	1	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.				
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.	Number failing.
BUREAU OF SURVEYS—Continued										
Engineer, Bridge, Assistant	\$4,000	1	1	0	138	1	1	0	0	1
Engineer, Statistical	.60 hr.	3	3	0	106	3	1	1	1	0
Engineer, Statistical	1,000	1	1	0	149	1	1	1	1	0
Engineer, Subway Construction, Assistant	1,800	1	1	0	53	1	1	1	0	0
Inspector of Drain Connections	1,200	1	1	0	112	1	1	1	0	0
Laboratory Assistant	840	1	1	0	7	0	0	0	0	0
Microscopist	1,200	2	2	0	31	0	0	0	0	0
Office Boy	25 mo.	1	1	0	146	0	0	0	0	0
Statistician	35c.-65c. hr.	3	3	0	106	3	2	2	0	0
Statistician, Assistant	35-38-47c. hr.	3	3	0	33	3	2	1	1	1
Statistician, Street Railway Traffic	.46 hr.	5	5	0	66	0	0	0	0	0
Stenographer	840	3	3	0	46	3	3	1	0	2
Tracer	.32 hr.	1	1	0	90	1	1	1	0	0
Transitman	840	1	0	1	0	0	0	0	0	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.				
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.	
BUREAU OF WATER										
Assistant to Chief, Third	\$1,600	1	1	0	105	1	1	1	0	0
Carpenter	4 day	1	1	0	64	1	1	0	0	1
Caulker	3 day	1	1	0	56	1	1	1	0	0
Chemist, Assistant	3 day	1	1	0	137	1	1	1	1	0
Clerk, Extra	.30 100 lines	23	23	0	29	No	competitive examination			
Draftsman	900	2	2	0	30	1	1	1	0	0
Draftsman, Chief	1,800	1	1	0	125	1	1	0	0	1
Draftsman, Architectural	4 50 d.	1	1	0	42	0	0	0	0	0
Draftsman, Engineering	4 50 d.	2	2	0	118	0	0	0	0	0
Driller	3 day	1	1	0	64	1	1	1	1	0
Engineer, Production	6 day	1	1	0	32	0	0	0	0	0
Engineer, Steam Hoisting	3 50 d.	1	1	0	61	0	0	0	0	0
Foreman, General	1,200	1	1	0	160	1	1	1	0	0
General Superintendent, Assistant	1,500	1	1	0	173	1	1	1	1	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.			
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.
BUREAU OF WATER—Continued									
Inspector, Construction Work	\$3 day	1	1	0	102	1	1	1	0
Landscape Expert	2,400	1	1	0	210	1	1	0	1
Pitometer Operator	3 50 d.	3	3	0	74	0	0	0	0
Purveyor	1,480	2	2	0	72	2	2	2	0
Registrar	2,400	1	1	0	89	0	0	0	0
Yardkeeper	915	3	3	1	14	0	0	0	0
DEPARTMENT OF SUPPLIES									
Clerk, Assistant Warrant	1,100	1	1	0	147	1	1	0	1
Clerk, Registration	1,500	1	1	0	125	1	1	0	1
Inspector	1,200	2	2	0	78	2	1	1	0
Stenographer	1,200	1	1	0	80	1	1	0	1
DEPARTMENT OF PUBLIC HEALTH AND CHARITIES									
DIRECTOR'S OFFICE									
Support Clerk	1,650	1	1	0	0	0	0	0	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.			
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.
BUREAU OF HEALTH									
Agent for Prevention of Diseases	\$1,500	1	1	0	105	1	1	1	0
Assistant, Antitoxin Laboratory	1,000	1	1	0	238	1	1	1	0
Butcher	900	1	1	0	209	1	1	1	0
Chauffer	900	5	5	0	101	5	5	2	3
Chief Meat and Cattle Inspector	1,350	1	1	0	154	1	1	1	0
Chief Inspector of Nuisances	1,900	1	1	0	51	0	0	0	0
Chief Sanitary Inspector	3,000	1	1	0	40	1	1	1	0
Chief Clerk	1,200	1	1	0	237	1	1	1	0
Cleaner	40 mo.	2	2	0	63	2	2	2	0
Dentist	700	10	10	0	104	10	10	10	0
Druggist	600	1	1	0	85	1	1	1	0
Engineer, Drainage	600	1	1	0	122	0	0	0	0
Fireman	50	2	2	0	177	2	1	1	1
Foreman	1,000	1	1	0	310	1	1	1	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.				
						Number of applicants attending.	Number passing.	Number permanently appointed.	Number failing.	
BUREAU OF HEALTH—Continued										
Head Nurse -----	\$600-900	23	23	0	54	23	2	2	1	0
Head Laundryman -----	1,200	1	1	0	135	1	1	1	1	0
Laboratory Helper -----	600	1	1	0	255	1	1	1	1	0
Laboratory Worker -----	40 mo.	1	1	0	29	1	1	1	1	0
Meat and Cattle Inspector, Assistant -----	1,000	2	2	0	177	2	2	2	1	0
Mechanic and Chauffeur -----	1,000	1	1	0	94	1	1	1	1	0
Medical Inspector -----	1,400	1	1	0	113	1	1	1	0	0
Milk Inspector, Assistant -----	1,020	1	1	0	75	1	1	1	0	0
Nuisance Inspector -----	1,100	1	1	0	211	1	1	1	0	0
Resident Physician, Assistant -----	800-900	6	6	0	71	6	4	4	3	0
Supervising Nurse -----	85 mo.	1	1	0	37	1	0	0	0	0
Supervising Nurse -----	1,200	1	1	0	0	0	0	0	0	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employ- ment in days.	Record of provisional applicants in later competitive examinations.				
						Number of applicants.	Number attending.	Number passing.	Number perma- nently appointed.	Number falling.
BUREAU OF CHARITIES										
Baker	\$52 mo.	1	1	0	44	1	1	0	0	1
Clerk	360	1	1	0	127	1	1	1	0	0
Clerk	430	2	2	0	127	2	2	2	0	0
Clerk, Assistant Storekeeper's	850	1	1	0	188	1	1	1	1	0
Clerk, Miscellaneous	800	4	4	0	140	4	4	4	1	0
Cook	720	1	1	0	67	1	1	1	0	0
Cook, Assistant	\$35-40 mo. 420-500 yr.	8	8	0	108	8	5	5	4	0
Dairyman	50 mo.	1	1	0	365	1	1	1	1	0
Driver, Ambulance	720	1	1	0	280	1	1	1	0	0
Druggist, Third Assistant	500	1	1	0	168	1	1	1	1	0
Engineer	88 38 m.	1	1	0	58	1	1	0	0	1
Farmer	30 to 45 m.	33	33	0	151	33	17	17	17	0
Farmer, Assistant	60 mo.	1	1	0	202	1	1	1	1	0
Fireman	40 mo.	4	4	0	87	4	3	2	0	1

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.				
						Number of applicants.	Number attending.	Number permanently appointed.	Number failing.	
BUREAU OF CHARITIES—Continued										
Fireman	\$40 mo.	3	3	0	114	3	3	2	0	1
Forewoman of Laundry	17 50-18 mo.	5	5	0	118	5	4	4	4	0
Foreman of Stables	800	1	1	0	84	1	1	1	1	0
Foreman of Yard Gang	25 mo.	1	1	0	86	1	1	1	0	0
Head Nurse	25-30-35 mo.	14	14	0	86	18	9	9	9	4
Housekeeper	600	2	2	0	72	2	1	1	1	0
Laboratory Worker	380	1	1	0	81	0	0	0	0	0
Laundress	16-17, 66-18 m.	3	3	0	68	2	2	2	2	0
Machine Laundryman	50 mo.	1	1	0	818	1	1	1	1	0
Manager of Laundry	1,200	1	1	0	115	1	1	1	0	0
Office Assistant	240	1	1	0	127	1	1	1	0	0
Officer, Special	480	1	1	0	127	1	1	1	0	0
Officer, Special	800	1	1	0	110	1	1	1	0	0
Outdoor Physician	360	1	1	0	53	1	1	1	1	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.			
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.
BUREAU OF CHARITIES--Continued									
Physician, Assistant	\$800	1	1	0	21	1	1	1	0
Physician, Assistant	600	1	1	0	36	1	1	1	0
Physician, Assistant	1,000	1	1	0	85	0	0	0	0
Physician, First Assistant	600	1	1	0	299	1	1	1	0
Physician, Assistant, Male	1,000	2	2	0	23	1	1	1	0
Physician, Clinical Assistant	600	12	12	0	100	10	4	4	3
Resident Physician, Assistant Chief	1,200	1	1	0	291	1	1	1	0
Porter in Laundry	25 mo.	1	1	0	161	1	0	0	0
Stenographer	480	2	2	0	135	2	2	2	1
Stenographer and Clerk	600	1	1	0	130	1	1	1	0
Storekeeper	395	1	1	0	222	1	1	0	1
Storekeeper	1,400	1	1	0	245	1	1	0	1
Watchman	50 mo.	1	1	0	84	1	1	1	0
Watchman, Assistant	400	1	1	0	15	0	0	0	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.			
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.
DEPARTMENT OF WHARVES, DOCKS AND FERRIES									
Inspector -----	\$1,000	1	1	0	183	1	1	0	0
Inspector, Dock Dredging -----	1,000	1	1	0	92	1	1	1	0
Ship Fitter -----	3 day	1	1	0	5	0	0	0	0
Wharf Builder -----	3 50 d.	5	5	0	59	0	0	0	0
CIVIL SERVICE COMMISSION									
Chief Clerk -----	2,400	1	1	0	70	1	1	1	0
Chief Examiner -----	2,400	1	1	0	122	1	1	1	0
Clerk -----	1,100	1	1	0	66	1	0	0	0
Clerk -----	900	1	1	0	46	0	0	0	0
Clerk -----	720	1	1	0	27	1	1	1	1
Clerk, Extra -----	2 day	1	1	0	53	0	0	0	0
Examiner, Assistant -----	1,800	5	5	0	75	5	3	2	1
Examiner, Extra -----	1,800	6	6	0	78	6	5	5	5
Examiner, Extra -----	1,200	2	2	0	11	No examination held			
Investigator -----	1,200	1	1	0	99	1	1	1	0

Provisional Examinations and Appointments—Continued.

Position	Salary.	Number of applicants.	Passed.	Rejected.	Average length of employment in days.	Record of provisional applicants in later competitive examinations.			
						Number of applicants.	Number attending.	Number passing.	Number permanently appointed.
CIVIL SERVICE COMMISSION—Continued									
Medical Examiner	\$1,000	1	1	0	78	0	0	0	0
Medical Examiner, Assistant	900	1	1	0	78	1	1	1	0
Monitor	5 day	1	1	0	10	0	0	0	0
Stenographer and Typewriter	900	2	2	0	22	0	0	0	0
DEPARTMENT OF LAW									
Cashier	1,800	1	1	0	139	1	1	1	0
Clerk	1,500	2	2	0	122	2	2	1	0
Clerk	1,400	2	2	0	121	2	2	0	2
Clerk	1,200	4	4	0	108	4	2	1	0
Clerk	1,000	2	2	0	60	2	1	1	0
Cleaner	420	1	1	0	95	1	1	1	0
Custodian	1,000	1	1	0	156	1	1	0	1
Matron	1,000	1	1	0	12	1	1	0	1
Messenger	1,000	2	2	0	116	2	2	2	1
Stenographer	1,250	1	1	0	17	1	0	0	0

IV. COMPETITIVE CLASS.

REINSTATEMENTS.

The Summary.

OFFICE OF THE MAYOR	1
Mayor's Office	0
Bureau of Contracts and Statistics	0
Bureau of Comprehensive Plans	0
Board of Recreation	1
Public Aquarium	0
Bureau of Correction	1
City Planning Exhibition	0
DEPARTMENT OF PUBLIC SAFETY	22
Director's Office	0
Bureau of Police	9
Fire Marshal's Office	0
Bureau of Fire	9
Electrical Bureau	1
Bureau of City Property	1
Bureau of Building Inspection	0
Bureau of Boiler Inspection	0
Bureau of Correction	1
Bureau of Elevator Inspection	1
DEPARTMENT OF PUBLIC WORKS	9
Director's Office	0
Bureau of Highways and Street Cleaning	3
Board of Highway Supervisors	0
Bureau of Lighting	0
Bureau of Gas	0
Bureau of Surveys	2
Bureau of Water	4
DEPARTMENT OF SUPPLIES	0
DEPARTMENT OF PUBLIC HEALTH AND CHARITIES	3
Director's Office	0
Bureau of Health	0
Bureau of Charities	3
DEPARTMENT OF WHARVES, DOCKS AND FERRIES	5
CIVIL SERVICE COMMISSION	1
DEPARTMENT OF LAW	2
Total	43

REINSTATEMENTS.

Name	Position	Salary	Date of resignation	Date of reinstatement
MAYOR'S OFFICE				
BOARD OF RECREATION				
Albert Hall	Caretaker	\$750 per annum	June 25, 1912	July 19, 1912
DEPARTMENT OF PUBLIC SAFETY				
BUREAU OF POLICE				
Harry L. Davis	Patrolman	\$3.00 per day	Jan. 12, 1911	April 19, 1912
William E. Doyle	Patrolman	\$3.00 per day	Nov. 19, 1907	April 19, 1912
John W. Gibson	Patrolman	\$3.00 per day	Aug. 12, 1908	April 19, 1912
John Hardesty	Patrolman	\$3.00 per day	Oct. 31, 1910	Jan. 11, 1912
Frederick W. Koester	Lieutenant	\$1,900 per annum	Sept. 20, 1907	Mar. 25, 1912
John E. Lambert	Patrolman	\$2.25 per day	May 4, 1912	Aug. 13, 1912
John H. Lynch	Detective	\$1,700 per annum	June 9, 1908	Mar. 13, 1912
George Manz	Mounted Patrolman	\$2.50 per day	May 10, 1912	July 9, 1912
William H. Shriver	Patrolman	\$2.85 per day	July 13, 1911	Jan. 16, 1912
BUREAU OF FIRE				
William Cook	Inspector, H. P. F. S.	\$1,000 per annum	Nov. 30, 1911	Oct. 9, 1912
Frank E. Devlin	Hoseman	\$1,100 per annum	Sept. 3, 1911	Jan. 8, 1912
Charles A. Gill	Fireman	\$1,100 per annum	April 21, 1912	July 11, 1912

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Reinstatements—Continued.

Name	Position	Salary	Date of resignation or suspension	Date of reinstatement
BUREAU OF FIRE—Continued				
Wm. M. Lanard	Rodman, H. P. F. S.	\$80 per month	Nov. 30, 1911	Sept. 30, 1912
George Moynahan	Hoseman	\$1,000 per annum	May 12, 1910	Mar. 9, 1912
Jos. H. Bea	Third Asst. Engineer, H. P. F. S.	\$1,000 per annum	Nov. 30, 1911	Oct. 9, 1912
George W. Sanderling	Hoseman	\$1,100 per annum	June 22, 1907	April 19, 1912
Annie D. Shubert	Cleaner	\$25 per month	May 17, 1912	Nov. 1, 1912
Howard N. Wells	Transitman, H. P. F. S.	\$900 per annum	Nov. 30, 1911	Sept. 30, 1912
ELECTRICAL BUREAU				
Harry B. Vinson	Bricklayer	\$5.00 per day	Jan. 15, 1912	June 18, 1912
BUREAU OF CITY PROPERTY				
William Publ	Superintendent of Squares	\$800 per annum	Mar. 31, 1912	July 31, 1912
BUREAU OF CORRECTION				
Robert Gayon	Assistant Engineer	\$400 per annum	Nov. 13, 1911	Jan. 1, 1912
BUREAU OF ELEVATOR INSPECTION				
John S. Meyers	Tank Inspector	\$1,200 per annum	Dec. 11, 1911	May 7, 1912
DEPARTMENT OF PUBLIC WORKS				
BUREAU OF HIGHWAYS				
Charles A. Burns	Watchman	\$720 per annum	Feb. 29, 1912	April 30, 1912
James McQuirk	Paver	\$3.75 per day	Nov. 24, 1911	Feb. 5, 1912

Reinstatements—Continued.

Name	Position	Salary	Date of resignation	Date of reinstatement
BUREAU OF HIGHWAYS—Continued				
George W. Mink	Inspector	\$1,800 per annum	June 16, 1910	Jan. 15, 1912
BUREAU OF SURVEYS				
Henry H. Quimby	Assistant Engineer of Bridges	\$4,000 per annum	Feb. 29, 1912	Sept. 1, 1912
J. Milton Ritchie	Draftsman	\$1,200 per annum	May 1, 1912	Sept. 5, 1912
BUREAU OF WATER				
Chas. F. Boyer	Caulker	\$3.00 per day	Jan. 6, 1912	Oct. 4, 1912
Chas. Jones	Caulker	\$3.00 per day	Jan. 6, 1912	Dec. 6, 1912
Arthur Molyneux	Machinist	\$4.25 per day	Nov. 23, 1911	May 1, 1912
Edwin S. Sutch	Shop Attendant	\$1,000 per annum	Jan. 1, 1912	April 1, 1912
DEPARTMENT OF HEALTH AND CHARITIES				
BUREAU OF CHARITIES				
Albert S. Krewson	Painter	\$3.00 per day	July 15, 1912	Aug. 7, 1912
John W. Monroe	Assistant Cook	\$35 per month	Sept. 20, 1911	Mar. 4, 1912
James A. Sweney	Painter	\$3.00 per day	Sept. 12, 1912	July 12, 1912
DEPARTMENT OF WHARVES, DOCK AND FERRIES				
George Boole	Pilot or Captain	\$100 per month	Dec. 15, 1911	Feb. 1, 1912

Reinstatements—Continued.

Name	Position	Salary	Date of resignation	Date of reinstatement
DEPARTMENT OF WHARVES, DOCKS AND FERRIES—Continued				
John F. Dierling	Assistant Marine Engineer	\$70 per month	Dec. 15, 1911	Mch. 1, 1912
Ephraim L. Hiles	Clerk	\$400 per annum	April 1, 1911	Jan. 12, 1912
Hoffman George	Machinist	\$3.75 per day	Dec. 15, 1911	Mch. 1, 1912
John R. Lank	Pilot or Captain	\$100 per month	Dec. 15, 1911	Mch. 1, 1912
CIVIL SERVICE COMMISSION				
Joseph Flaherty	Clerk	\$1,100 per annum	Feb. 1, 1912	April 25, 1912
DEPARTMENT OF LAW				
Frederick C. Tarrington	Clerk	\$1,000 per annum	Dec. 30, 1911	Sept. 18, 1912
John F. Becker	Clerk	\$1,000 per annum	Jan. 1, 1912	Dec. 27, 1912

V
COMPETITIVE CLASS.

TRANSFERS.

The Summary.

OFFICE OF THE MAYOR	1
Mayor's Office	1
Bureau of Contracts and Statistics	0
Bureau of Comprehensive Plans	0
Board of Recreation	0
Public Aquarium	0
City Planning Exhibition	0
DEPARTMENT OF PUBLIC SAFETY	7
Director's Office	0
Bureau of Police	1
Fire Marshal's Office	0
Bureau of Fire	2
Electrical Bureau	1
Bureau of City Property	2
Bureau of Building Inspection	0
Bureau of Boiler Inspection	0
Bureau of Correction	0
Bureau of Elevator Inspection	1
DEPARTMENT OF PUBLIC WORKS	28
Director's Office	0
Bureau of Highways and Street Cleaning	16
Board of Highway Supervisors	1
Bureau of Lighting	0
Bureau of Gas	0
Bureau of Surveys	3
Bureau of Water	8
DEPARTMENT OF SUPPLIES	0
DEPARTMENT OF PUBLIC HEALTH AND CHARITIES	21
Director's Office	0
Bureau of Health	4
Bureau of Charities	17
DEPARTMENT OF WHARVES, DOCKS AND FERRIES	0
CIVIL SERVICE COMMISSION	3
DEPARTMENT OF LAW	4
Total	64

APPENDIX E

NON-COMPETITIVE CLASS.

DEPARTMENT OF WHARVES, DOCKS AND FERRIES.

Name.	Address.	Position.	Salary.	Date appointed.	Average.
Anderson, Joseph	2401 Sedgeley avenue	Third Assistant Engineer	\$80 per month	January 14, 1912	77.3
Arue, Louis	743 East Ontario street	Chief Engineer	\$125 per month	January 8, 1912	98
Ayres, Howard W.	3181 Memphis street	First Assistant Engineer	\$110 per month	January 14, 1912	77
Ayres, Howard W.	3181 Memphis street	Chief Engineer	\$110 per month	March 1, 1912	72
Bellevou, Leon	147 Dewey street	First Assistant Engineer	\$75 per month	January 8, 1912	82.2
Booke, George	5225 Walnut street	First Pilot	\$75 per month	January 8, 1912	95
Doane, Warren F.	3256 Walnut street	Collector of Rents and Wharfage	\$2,400 per year	March 4, 1912	90.2
Eckfeldt, Alonzo	1707 Harrison street	Chief Engineer	\$125 per month	January 8, 1912	86.6
Eckman, Carl	2537 Woodstock street	Second Pilot	\$80 per month	February 8, 1912	80.6
Glocher, Sigmond	528 North Paxon street	Second Pilot	\$80 per month	January 25, 1912	82.2
Green, Joseph H.	5648 Rodman street	Second Pilot	\$80 per month	January 8, 1912	72
Green, Joseph H.	5643 Rodman street	Pilot or Mate	\$55 per month	March 1, 1912	72
Gunning, James P., Jr.	3325 North Howard street	First Assistant Engineer	\$75 per month	January 8, 1912	77
Gunning, James P., Jr.	3325 North Howard street	Chief Engineer	\$80 per month	March 1, 1912	73.8
Johnson, Peter	112 Vine street	Second Assistant Engineer	\$75 per month	January 8, 1912	94.4
Kemp, Charles F.	8911 Frankford avenue	Pilot or Captain	\$100 per month	March 1, 1912	95
Lynch, Gideon W.	832 South Front street	First Pilot	\$75 per month	January 8, 1912	91
Lynch, Gideon W.	832 South Front street	Pilot or Mate	\$65 per month	March 13, 1912	88
Minford, William J.	1814 South Broad street	Captain	\$175 per month	January 8, 1912	86
Prickitt, George	2536 South Eighth street	Second Assistant Engineer	\$85 per month	February 4, 1912	91
Reed, Harry F.	1008 Moyamensing avenue	Second Assistant Engineer	\$100 per month	January 14, 1912	83.7
Tucker, Morris	5732 Arch street	Captain	\$175 per month	January 8, 1912	95
Van Sclver, Asa	1518 Moyamensing avenue	Second Pilot	\$80 per month	January 8, 1912	95
Van Sclver, Asa	1518 Moyamensing avenue	First Pilot	\$75 per month	January 25, 1912	95
Vaughn, Charles W.	2419 South Watt street	Second Assistant Engineer	\$65 per month	January 8, 1912	93.1
Zellman, Charles	Arch Street House	Fourth Assistant Engineer	\$80 per month	January 14, 1912	95

*Later placed in Competitive Class. All other positions, being on the City Ice Boats, in this table, were, on April 18, 1912, placed in the Competitive Class.

APPENDIX F

LABOR CLASS.

Applications filed	3,844
Appointments made	2,292
Transfers	195
Reinstatements	13

APPENDIX G

EXEMPT CLASS.

From January 1 to December 31, 1912, there were 1,378 appointments made in the Exempt Class, the great majority of which were in the Departments of Public Health and Charities and Wharves, Docks and Ferries.

I. ROSTER OF APPOINTEES EXEMPT BY ACT OF MARCH 5, 1906.

holding office on December 31, 1912, by virtue of Section 12, paragraphs 1 and 2, Act of March 5, 1906, as follows:

“Sec. 12. The following positions shall be included in the exempt class:

1. The Assistant Directors of the Executive Departments.
2. One Secretary and one Confidential Clerk to the Director of each Executive Department.”

Department	Position	Name	Salary per annum
Mayor -----	One secretary -----	Cyrus D. Foss, Jr.---	\$6,000
	One confidential clerk and stenographer --	Cora Duffey -----	1,200
Public Safety -----	Assistant Director---	Andrew S. Murphy--	4,000
	Secretary -----	Raymond M. Slotter	2,400
Health and Charities	Assistant Director---	Alexander M. Wilson	4,000
	One confidential clerk and stenographer --	John E. Geshwind---	1,300
Public Works -----	Assistant Director---	James Reed, Jr.-----	4,000
	Clerk -----	Ernest T. Hanefeld---	1,500
Law -----	*First Assistant ----	Jos. P. McCullen----	6,000
	One confidential clerk	Eugene A. Kemper---	1,500
Wharves, Docks and Ferries -----	Assistant Director---	John Meigs -----	4,000
	Secretary -----	William K. Johnson---	2,500
Supplies -----	Assistant Director---	Jos. S. MacLaughlin	4,000
	One confidential clerk	Jos. L. Long.-----	1,200

*Removable at the pleasure of the City Solicitor by Act of April 27, 1911, page 99; analogous to Assistant Director in other Departments.

• II. LIST OF POSITIONS EXEMPTED BY ORDER OF THE COMMISSION.

By virtue of Section 12, paragraph 3, Act of March 5, 1906, which reads:

"In addition to the above, there may be included in the exempt class, all other officers or positions except laborers, for the filling of which competitive or non-competitive examinations shall be found by the Civil Service Commission to be impracticable. But no office or position shall be deemed to be in the exempt class unless it is specifically named in such class in the rules; and the reasons for each such exemption shall be stated separately in the annual reports of the said Commis-

sion. Not more than one appointment shall be made to, or under the title of, any such office or position, unless a different number is specifically mentioned in the rules. No office or position shall be classified by the Commission in the exempt class, except after public hearing by the Commission or any member thereof. Suitable public notice of such hearings shall be given by the said Commission. At any such hearing any taxpayer of any city of the first class shall have the right to be heard, either in person or by counsel, either in opposition to or in favor of the proposed exemption. Appointments in the exempt class may be made without examination—”

The following positions were placed in the exempt class:

Department of Public Health and Charities.

Exempted June 22, 1908, because of the difficulty in securing persons to fill positions for any length of time, owing to the fact that diseases of a contagious nature are handled, the aversion that is prevalent among people to fill positions connected with insane patients, and the small salaries paid.

<i>Bureau of Health.</i>		Not over
		per mo. each.
4 Cooks		\$50 00
30 Nurses		50 00
80 Miscellaneous Helpers		50 00
4 Firemen		40 00
4 Clerks		40 00

<i>Bureau of Charities.</i>		
Item 1.		Per mo. each.
4 Firemen		\$40 00
3 Machine Laundrymen		30 00

Item 2.

1 Storekeeper's Clerk	\$25 00
1 Storekeeper's Clerk	15 00
1 Butcher	25 00
1 Cook	20 00
1 Head Waitress	16 00
4 Waitresses	14 00
1 Laundress	25 00
2 Laundresses	16 00
1 Chambermaid	18 00
8 Gatekeepers	9 00
6 Runners	10 00
7 Helpers	12 00
6 Helpers	10 00
1 Shoe Repairer	18 00
4 Barbers	18 00
3 Runners	15 00
1 Draftsman	25 00
2 Messengers	35 00
2 Messengers	25 00
1 Assistant Doorkeeper	25 00
3 Assistant Watchmen	33 33½
4 Bakers	52 00
2 Laundresses	15 00

Item 3.

Per mo.,
including
board and
lodging

50 Miscellaneous Helpers	\$1 00 to \$2 00
50 Miscellaneous Helpers	3 00
25 Miscellaneous Helpers	4 00
50 Miscellaneous Helpers	5 00
5 Miscellaneous Helpers	6 00
10 Miscellaneous Helpers	7 00
5 Miscellaneous Helpers	8 00
5 Miscellaneous Helpers	10 00
5 Miscellaneous Helpers	12 00
3 Miscellaneous Helpers	14 00
3 Miscellaneous Helpers	15 00
2 Miscellaneous Helpers	16 00
3 Miscellaneous Helpers	18 00
1 Messenger	30 00
1 Telephone Operator	25 00
1 Tailor	25 00
1 Clerk	24 00

	Item 12.	Per mo. each.
1 Dining Room Man		\$35 00
1 Assistant Night Nurse		25 00
1 Cook (Assistant)		20 00
Item 13.		
1 Assistant Cook		\$20 00
Item 14.		
120 Pupil Nurses		\$9 00
3 Assistant Female Nurses		18 00
3 Assistant Male Nurses		18 00
1 Assistant Male Nurse		10 00
6 Stretcher Bearers		9 00
20 Orderlies		18 00
12 Waitresses		13 00
12 Male Cleaners		18 00
12 Female Cleaners		12 00
Item 22.		
175 Attendants		\$50 00

Department of Wharves, Docks and Ferries.

Exempted April 18, 1912, for the following reasons:

“1st. On account of the unreliable character of the help employed and the constant changes occurring.

2d. The necessity for having a full crew on all vessels, as the number of men in the crew is fixed on the vessel's papers, and it is a punishable offense to operate with a smaller crew than specified; this means that it is frequently necessary to procure men at a moment's notice, or keep the vessel tied to the wharf until a sufficient number of men are procured.

3d. The licensed officers, masters, engineers and pilots operate under United States' licenses, which are procured only after a certain number of years' experience in that particular line of work, and after passing an examination. No other person can fill these positions lawfully.

4th. These men (officers and crews), being seafaring men, are so frequently away on voyages or trips that it is impossible to keep lists from which to select men. It invariably happens that in case of a vacancy the men you want are away and you have to take any person you can get.

5th. The work is hard and dirty and the hours are long; very few men except those who are used to it will accept a position on board of the boats or dredges—the men's being required to live on board of the vessels makes the position undesirable for men with families.

6th. To stop work on one of these vessels twenty-four hours, while a fireman or deck hand or other employee is attending the requirements of the Civil Service Commission, would entail a loss of time to the City of \$300 or \$400; in fact, many of the men refuse to go to the trouble of running around seeking indorsements to an application and paying a notary's fee to swear to the same, when they can get as good a job or better on any steamer on the Delaware, without all that trouble.

In case of men living together on a boat as these men do, a man holding a high-grade of license and capable of passing a satisfactory examination is often undesirable on account of his temperament or disposition. Further, licensed officers are frequently required, at a moment's notice, to go from one vessel to another, and as the appropriations for these vessels are taken care of in different items, and the officers receive, in some instances, different rates of pay, the necessity for an examination at each change would be a serious handicap to efficient management.

The manual dexterity required in certain of these men (i. e., two dredge captains and two dredge opera-

tors), can only be determined by actual experience, and as to which no examination could possibly furnish any clue.

As to the three tug captains, there is the further consideration that only men who have had training in that particular work are competent to handle scows, and the number of men who have had such training is extremely limited. As to the three assistant engineers, I would say that the work of these men is difficult to define, owing to the limitations put upon the Department by the form of the annual appropriation, it is unavoidably necessary to detail these men from time to time upon various duties."

(a) *City Ice Boats:*

	Per mo. each.
3 Captains	\$200 00
7 Pilots	110 00
3 Quartermasters	40 00
4 Cooks	55 00
3 Stewards	55 00
1 Boatman	40 00
6 Messmen	35 00
18 Deckhands	35 00
3 Chief Engineers	150 00
10 Assistant Engineers	110 00
9 Oilers	45 00
7 Water Tenders	45 00
31 Firemen	40 00
6 Coal Passers	30 00
1 Electrician	60 00

(b) *City Dredges:*

1 Dredge Captain	\$150 00
1 Dredge Captain	125 00
3 Tug Captains	100 00
1 Yacht Captain	100 00
2 Tug Mates	55 00
1 Chief Engineer	110 00
4 Chief Engineers	90 00
1 Yacht Engineer	70 00
2 Dredge Operators	75 00

3 Assistant Engineers	70 00
8 Firemen	40 00
2 Tug Firemen	60 00
16 Deckhands	35 00
2 Tug Deckhands	60 00
2 Yacht Deckhands	60 00
2 Coal Passers	30 00
1 Steward	55 00
3 Stewards	45 00
1 Yacht Steward	50 00
2 Messmen	30 00
2 Scowmen	35 00

Department of Public Safety, Bureau of Police.

At a public hearing on September 25, 1912, the position of "Superintendent of Police, salary \$4,500 a year," was placed in the exempt class, because "of all the Bureau Chiefs, this position is most confidential. The work of the Bureau of Police is of such a nature that there must be the most cordial and harmonious relations between the Superintendent and the Director, which will make it impossible for any difference of opinion to exist." "This Commission finds it to be impracticable at this time to fill the position of Superintendent of Police through a competitive or a non-competitive examination."

Superintendent of Police\$4,500 per annum.

Department of Law.

Exempted on January 25, 1912, because "the business of the Law Office is of the most confidential and important nature; the City Solicitor is responsible for the conduct of the legal affairs of the City, which he entrusts to a considerable extent to the actual care of his assistants; the qualifications of the assistants are attested by their membership in the legal profession, and their fitness to represent the City has already been ascertained. The Commission feels itself unable to demonstrate, with any greater

clearness, or ascertain with any higher degree of certainty, by any form of examination is the personal element in the profession of advocacy; it is impossible for a Civil Service Commission to conduct an examination calculated to discover such qualifications."

1 Assistant	\$5,000 00
4 Assistants	4,000 00
9 Assistants	3,000 00
2 Assistants	2,500 00
5 Assistants	2,400 00
1 Assistant	2,000 00
3 Assistants	1,800 00
6 Assistants	1,500 00
1 Stenographer	1,500 00

III. ROSTER OF APPOINTEES EXEMPTED BY ORDER OF THE COMMISSION.

In accordance with Section 15, paragraph 2, Act of March 5, 1906, which reads:

"In case of vacancy in a position in the competitive class, where peculiar and exceptional qualifications of a scientific, professional, or educational character are required, and upon satisfactory evidence that, for specified reasons, competition in such special case is impracticable, and that the position can be best filled by the selection of some designated person of high and recognized attainments in such qualities, the said Commission may suspend the provisions of the statute requiring competition in such case, but no such suspension shall be general in its application to such place, and all such cases of suspension shall be reported in the annual report of the Commission, with the reasons for the same."

The Commission exempted the following appointees:

	Salary
A Merritt Taylor, Transit Commissioner	Gratis
Ford, Bacon & Davis, Consulting Engineers	Gratis

SUMMARY OF PHY

Position.	Number of appli- cants passing physical exami- nation.	Age.	
		Years.	Month
DEPARTMENT OF PUBLIC SAFETY.			
ELECTRICAL BUREAU.			
Climber -----	11	32	8 1-
Pole Inspector -----	7	35	11 1-
FIRE BUREAU.			
Captain -----	41	43	2 2-
Chief, Battalion -----	27	43	7 1-
Driver -----	14	31	5
Engineman -----	19	40	4
Fireman -----	11	36	8
Hoseman -----	111	26	9 1-
Inspector, Special High Pressure Fire Service -----	1	40	6
Lieutenant -----	116	37	1 1-
Tillerman -----	13	37	3 1-
POLICE BUREAU.			
Detective -----	54	38	3 1-
Drillmaster -----	3	38	4 1-
Engineer on Boat -----	7	34	2 1-
Fireman on Boat -----	15	36	—
Inspector, Fire Marshal's Office -----	29	36	3
Lieutenant -----	46	43	10 2-
Marshal, Assistant Fire -----	15	36	10 1-
Patrolman -----	1,120	31	1 2-
Pilot -----	3	31	1-
Sergeant -----	244	40	1 9-

after a public hearing on June 19, 1912, for the reasons stated in the Act quoted above.

Salary

Carleton E. Davis, Chief of the Bureau of Water, \$10,000

after a public hearing on August 29, 1912, because it seemed impossible through the ordinary methods of a competitive examination to obtain such personal qualities, experience, ability and technique as the position required.

APPENDIX I

AN ACT

To regulate and improve the civil service of the cities of the first class in the Commonwealth of Pennsylvania, making violation of its provisions to be a misdemeanor, and providing penalties for violations thereof.

SECTION 1. Be it enacted, &c., That on and after the first day of March, one thousand nine hundred and six, appointments to, and promotions in, the civil service of the cities of the first class shall be made only according to qualifications and fitness, to be ascertained by examinations, which so far as practicable shall be competitive, as hereinafter provided. On and after the said date, no person shall be appointed, transferred, reinstated, or promoted as an officer, clerk, employee, or laborer in the civil service, under the government of any city of the first class, in any manner or by any means other than those prescribed in this act: *Provided*, That the provisions of this act shall not apply to any soldier, sailor, or marine honorably discharged from service in any war for the United States Government, nor to their widows or children.

SECT. 2. The Civil Service Commission of each city of the first class shall consist of three commissioners, to be appointed by the Mayor. The persons appointed commissioners shall be men in full sympathy with the purposes of this act. Not more than two of the said commissioners at any one time shall be adherents of the same political party. The commissioners in each city shall be appointed as follows: On the first day of March, one thousand nine hundred and six, the Mayor of each city of the

first class shall appoint three commissioners, the first to serve for a term of five years, the second for a term of three years, and the third for a term of one year. The Mayor shall appoint one of the commissioners President of the Commission, and one the Secretary thereof. At the expiration of each of the said terms the Mayor shall appoint a commissioner to serve for the full term of five years. Thereafter each commissioner shall be appointed for a full term of five years. The Mayor may at any time remove a commissioner, for good cause, which shall be stated in writing and made a part of the records of the Commission, and fill such vacancy, or any other vacancy which may occur in said Commission, by appointment of a successor to serve for the remainder of the unexpired term. The commissioners shall hold no other office under the United States, the Commonwealth of Pennsylvania, or any city or county thereof. The President of the Commission shall receive a salary of five thousand dollars per year. Each of the other commissioners shall be paid a salary of three thousand dollars per year. The commissioners shall qualify by filing with the Mayor an oath to perform faithfully the duties of their office.

SECT. 3. The Civil Service Commission in each city shall employ a chief examiner and such other clerks, examiners and employees as it may deem necessary or proper to carry out the purposes of this act. The clerks, examiners, and employees shall receive salaries to be fixed by the Civil Service Commission and approved by the Mayor. Councils shall annually appropriate the sums necessary for the work of the Commission. The Commission shall not expend, or authorize the expenditure of, moneys for any purpose in excess of the sums appropriated therefor by law.

SECT. 4. No officer or officers, having the power of appointment to, or employment in, the civil service of any

city of the first class, shall, after the first day of March, one thousand nine hundred and six, select or appoint any person for appointment, employment, promotion, or reinstatement except in accordance with the provisions of this act, and the rules and regulations prescribed thereunder: *Provided*, That the power of the Mayor to appoint special policemen, in times of emergency or riot, as provided in article three, section one, of the act of June fifteenth, one thousand eight hundred and eighty-five, entitled "An Act to provide for the better government of cities of the first class in this Commonwealth," shall remain as heretofore.

SECT. 5. It shall be the duty of the Mayor and heads of departments of every city of the first class to cause suitable and convenient rooms and accommodations to be assigned or provided, and to be furnished, heated, and lighted, for carrying on the work and examinations of the Civil Service Commission. The Civil Service Commission may order from the proper authorities the necessary stationery, postage stamps, and official seal and other articles to be supplied, and the necessary printing to be done, for its official use. It shall be the duty of the officers of every city of the first class to aid the said Civil Service Commission in all proper ways in carrying out the provisions of this act, and to allow the reasonable use of public buildings, and to heat and light the same for holding the examinations and investigations, and in all proper ways to facilitate the same.

SECT. 6. The Civil Service Commission in each city of the first class shall:

First.—Prescribe, amend, and enforce rules and regulations for carrying into effect the provisions of this act. All rules so prepared may, from time to time, be added to, amended, or rescinded: *Provided*, That all rules shall be

approved by the Mayor before they go into effect; but, when so approved, shall not be annulled or changed except by the Commission, with the approval of the Mayor.

Second. —Keep minutes of its own proceedings, and records of its examinations and other official action. All recommendations of applicants for office, received by the said Commission, or by any officer having authority to make appointments to office, shall be kept and preserved; and all such records, recommendations of former employers excepted, and all written causes of removal filed with it, shall, subject to reasonable regulation, be open to public inspection.

Third.—Make investigations, either sitting as a body, or through a single commissioner, concerning all matters touching the enforcement and effect of the provisions of this act and the rules and regulations prescribed thereunder concerning the action of any examiner or subordinate of the Commission, and any person in the public service, in respect to the execution of this act; and, in the course of such investigations, each commissioner and the chief examiner shall have power to administer oaths and affirmations, and to take testimony.

Fourth.—Have power to subpoena and require the attendance in this State of witnesses, and the production thereby of books and papers pertinent to the investigations and inquiries hereby authorized, and to examine them and such public records as it shall require in relation to any matter which it has the authority to investigate. The fees of such witnesses for attendance and travel shall be the same as for witnesses before the Courts of Common Pleas, and shall be paid from the appropriation for the incidental expenses of the Commission. All officers in the public service, and their deputies, clerks, subordinates, and employees, shall attend and testify when required to do so

by said Commission. Any disobedience to, or neglect of, any subpoena issued by the said commissioners, or any one of them, to any person, shall be held a contempt of court, and shall be punished by any Court of Common Pleas of this Commonwealth as if such subpoena had been issued therefrom. Any Judge of any of said courts shall, upon the application of any one of said commissioners, in such cases, cause the process of said court to issue to compel such person or persons, disobeying or neglecting any such subpoena, to appear and to give testimony before the said commissioners, or any one of them, and shall have power to punish any such contempt.

Fifth.—They shall also have power to recommend impeachment or removal of officials or employees who shall be deemed guilty by a majority of the commissioners, after a full hearing, of the charges that they have coerced or attempted to coerce their subordinates in the performance or non-performance of a political or other service having no relation to the duties of a municipal employee. Such recommendations shall be made, in writing, to the body having the power to impeach, or to the person who appointed the accused official or employee.

Sixth.—Make an annual report to the Mayor, showing its own actions; the rules and regulations, and all the exceptions thereto, in force; and the practical effects thereof; and any suggestions it may approve for the more effectual accomplishment of the purposes of this act. Five hundred copies of the annual report shall be printed for public distribution.

SECT. 7. The civil service of the cities of the first class shall be divided into the unclassified service and the classified service. The unclassified service shall comprise:

All officers elected by the people.

All heads of departments, whose appointment is subject to confirmation by the Select Council thereof.

All persons appointed by name in any statute.

The classified service shall comprise all persons not included in the unclassified service.

SECT. 8. The Civil Service Commission in each city shall make rules and regulations providing for examinations for positions in the classified service of each city, and for appointments to and promotions therein, and for such other matters as are necessary to carry out the purposes of this act. Due notice of the contents of such rules and regulations, and of any modification thereof, shall be given by mail, in due season, to appointing officers and heads of departments affected thereby, and said rules and regulations, and modifications thereof, shall also be printed for public distribution. All original appointments to the competitive and non-competitive classes of the classified service shall be for a probationary period of three months: *Provided, however,* That at any time during the probationary period, the appointee may be dismissed for just cause, in the manner provided in section twenty. If at the close of this probationary term the conduct or capacity of the probationer has not been satisfactory to the appointing officer, the probationer shall be notified in writing that he will not receive absolute appointment, whereupon his employment shall cease; otherwise, his retention in the service shall be equivalent to his final appointment.

SECT. 9. All examinations for positions in the classified service shall be practical in their character, and shall relate to those matters which will fairly test the qualifications and fitness of the persons examined to discharge the duties of the office or employment sought by them. All examinations shall be free, and open to all applicants who have fulfilled the preliminary requirements stated in sec-

tion ten of this act. The examinations of applicants for employment as laborers shall relate to their capacity for labor, their habits as to sobriety and industry, and their experiences in the kind of work for which they apply. All applicants for any position in the classified service may, subject to the regulations adopted by the Civil Service Commission, be required to submit to a physical examination before being admitted to the regular examinations held by the Commission. Adequate public notice of the time and place of every examination held under the provisions of this act, together with information as to the kind of position or place to be filled, shall be given at least two weeks prior to such examinations. The said Commission shall adopt reasonable regulations for permitting the presence of representatives of the press at the examinations. The names of the candidates passing any examination, and the order of their standing on any eligible list, shall be made part of the public records of the Civil Service Commission.

SECT. 10. The Civil Service Commission in each city shall require persons applying for admission to any examination provided for under this act, or under the rules and regulations of the said Commission, to file in its office, a reasonable time prior to the proposed examination, a formal application, in which the applicant shall state under oath or affirmation:

- 1.—His full name, residence, and post office address.
- 2.—His citizenship, age, and the place and date of his birth.
- 3.—His health, and his physical capacity for public service.
- 4.—His business and employments and residences for at least the three previous years.

5.—Such other information as may reasonably be required touching the applicant's qualifications and fitness for the public service.

Blank forms for such applications shall be furnished by the said Commission, without charge, to all persons requesting the same. The said Commission may require, in connection with such application, such certificates of citizens, physicians, or others, having knowledge of the applicant, as the good of the service may require. The said Commission may refuse to examine an applicant, or, after examination, to certify an eligible, who is found to lack any of the established preliminary requirements for the examination or position or employment for which he applies; or who is physically so disabled as to be rendered unfit for the performance of the duties of the position to which he seeks appointment; or who is addicted to the habitual use of intoxicating liquors or drugs; or who has been guilty of any crime, or of infamous or notoriously disgraceful conduct; or who has been dismissed from the public service for delinquency or misconduct; or who has made a false statement of any material fact, or practiced or attempted to practice any deception or fraud, in his application, in his examination, or in securing his eligibility. If any applicant feels himself aggrieved by the action of the Commission in so refusing to examine him, or, after an examination, to certify him as an eligible as provided in this section, the Commission shall, at the request of such applicant, appoint a time and place for a public hearing; at which time such applicant may appear, by himself or counsel, or both, and the Commission shall then review its refusal to make such examination or certification, and testimony shall be taken. The Commission shall subpoena any competent witnesses requested by the applicant. After such review, the Commission shall file the testimony taken

in its records, and shall again make a decision, which shall be final. When any position to be filled involves fiduciary responsibility, the appointing officer may require the appointee to furnish a bond or other security and shall notify the Commission of the amount and other details thereof: *Provided, however,* That any surety company, the bonds of which are accepted by a judge of any court of record of the county wherein the city is located, shall be of sufficient surety on any such bond.

SECT. 11. The offices, positions, and employments in the classified service of every city of the first class shall be arranged by the Civil Service Commission in four classes—to be designated as the exempt class, the competitive class, the non-competitive class, and the labor class.

SECT. 12. The following positions shall be included in the exempt class:

1.—The assistant directors of the executive departments.

2.—One secretary and one confidential clerk to the Mayor, and one confidential clerk to the director of each executive department.

3.—In addition to the above, there may be included in the exempt class all other officers or positions except laborers, for the filling of which competitive or non-competitive examinations shall be found by the Civil Service Commission to be impracticable. But no office or position shall be deemed to be in the exempt class, unless it is specifically named in such class in the rules; and the reasons for each such exemption shall be stated separately in the annual reports of the said Commission. Not more than one appointment shall be made to, or under the title of, any such office or position, unless a different number is specifically mentioned in the rules. No office or position shall be classified by the Commission in the exempt

class, except after public hearing by the Commission or any member thereof. Suitable public notice of such hearings shall be given by the said Commission. At any such hearing any taxpayer of any city of the first class shall have the right to be heard, either in person or by counsel, either in opposition to or in favor of the proposed exemption. Appointments in the exempt class may be made without examination.

SECT. 13. The competitive class shall include all positions and employments, now existing or hereafter created, of whatever functions, designations, or compensation, in each and every branch of the classified service, except such positions as are in the exempt class, the non-competitive class, or the labor class. Appointments shall be made to, or employment shall be given in, all positions in the competitive class that are not filled by promotion, reinstatement, transfer, or reduction under the provisions of this act and the rules made in pursuance thereof, by appointment from among those certified to the appointing officer, in accordance with the provisions of section fourteen of this act. The term of eligibility of an applicant shall be fixed for each list by the Civil Service Commission, at not less than one nor more than three years. Appointments shall be made from the eligible list most nearly appropriate, and a new and separate list shall be created for a stated position only when there is no appropriate list existing from which appointment may be made. No person shall be appointed or employed under any title not appropriate to the duties to be performed; and no person shall be transferred to any position, subject to a competitive examination, unless he shall have previously passed an open, competitive examination equivalent to that required for such position.

SECT. 14. Every position or employment in the competitive class, unless filled by promotion, transfer, rein-

statement, or reduction, shall be filled only in the following manner: The appointing officer shall request the certification of eligibles. The Civil Service Commission shall thereupon certify, from the eligible register most nearly appropriate to the position to be filled, the names of the four persons thereon who received the highest averages at examinations held under the provisions of this act: *Provided, however,* That no such name shall be certified more than four times to the same appointing officer, for the same or a similar position. The appointing officer shall, with sole reference to the relative qualifications and fitness of the candidates, make a selection from the four names certified, unless objection shall be made by him, and sustained by the Commission, to one or more of the persons certified for any of the reasons stated in section ten. It shall be the duty of the appointing officer to appoint the person, so selected, for a probationary period, as provided in section eight. The provisions of this section (fourteen) shall not apply to positions which are specially excepted by the Commission from competitive examinations, as provided in section fifteen.

SECT. 15. Positions in the competitive class may be filled without competition, only as follows:

1. Whenever there are urgent reasons for filling a vacancy in any position in the competitive class, and there is no list of persons eligible for appointment after a competitive examination, the appointing officer may nominate a person to the Civil Service Commission for non-competitive examination; and if such nominee shall be certified by the said Commission as qualified, after such non-competitive examination, he may be appointed provisionally to fill such vacancy, until a selection and appointment can be made after competitive examination; but such provisional appointment shall not continue for a longer period

than three months, nor shall successive temporary appointments be made to the same position, under this provision.

2. In case of vacancy in a position in the competitive class, where peculiar and exceptional qualifications of a scientific, professional, or educational character are required, and upon satisfactory evidence that, for specified reasons, competition in such special case is impracticable, and that the position can be best filled by the selection of some designated person of high and recognized attainments in such qualities, the said Commission may suspend the provisions of the statute requiring competition in such case, but no such suspension shall be general in its application to such place, and all such cases of suspension shall be reported in the annual report of the Commission, with the reasons for the same.

3. Where the services to be rendered by an appointee in the service of any city of the first class are for a temporary period, not to exceed one month, and the need of such service is important and urgent, the appointing officer may select for such temporary service any person on the proper list of those eligible for permanent appointment, without regard to his standing on such list. Successive temporary appointments to the same position shall not be made under this provision. The acceptance or refusal by an eligible of a temporary appointment shall not affect his standing on the register for permanent employment, nor shall the period of temporary service be counted as a part of the probationary service, in case of subsequent appointment to a permanent position.

SECT. 16. Promotions shall be based upon merit and fitness, to be ascertained according to the rules and regulations to be promulgated by the Civil Service Commission in each city, to be approved by the Mayor, as hereinbefore provided.

SECT. 17. The Civil Service Commission in each city shall promulgate rules and regulations relating to transfers and reinstatements in the service, to be approved by the Mayor, as hereinbefore provided.

SECT. 18. The non-competitive class shall include only such positions as are not in the exempt class or the labor class, and which it is impracticable, in the judgment of the Civil Service Commission, to include in the competitive class. Appointments to positions in the non-competitive class shall be made after such non-competitive examination as is prescribed by the rules of the Civil Service Commission. The said Commission shall state in its annual report, the number of persons who come within this class, and the character of their services.

SECT. 19. The labor class shall include ordinary, unskilled laborers. Vacancies in the labor class shall be filled by appointment, from lists of applicants registered by the Civil Service Commission. Preference in employment from such lists shall be according to rules and regulations to be promulgated by the Civil Service Commission in each city.

SECT. 20. No officer, clerk, or employee in the competitive class or in the non-competitive class of the classified civil service of any city of the first class, who shall have been appointed under the provisions of this act, or of the rules made pursuant thereto, shall be removed, discharged, or reduced in pay or position except for just cause, which shall not be religious or political. Further, no such officer, clerk, or employee shall be removed, discharged, or reduced, except as provided in section eight of this act, until he shall have been furnished with a written statement of the reasons for such action, and been allowed to give the removing officer such written answer as the person sought to be removed may desire. In every case of such removal

or reduction a copy of the statement of reasons therefor, and of the written answer thereto, shall be furnished to the Civil Service Commission, and entered upon its public records. Nothing in this act shall limit the power of any officer to suspend a subordinate for a reasonable period, not exceeding thirty days: *Provided, however,* That successive suspensions are not to be allowed. Nothing in this act shall alter the procedure required for the removal or punishment of policemen and firemen, as provided in article three, section one, of the Act of June first, one thousand eight hundred and eighty-five, relating to the government of cities of the first class.

SECT. 21. No person shall be appointed to, or employed in, any position in the classified service for which rules shall have been prescribed, pursuant to the provisions of this act, until he has passed an examination, or is shown to be specially exempted from such examination, in conformity with the provisions of this act and of such rules made pursuant thereto. It shall be the duty of each appointing officer of every city of the first class to report to the Civil Service Commission, forthwith upon such appointment or employment, the name of such appointee or employee, the title of his office or employment, the date of commencement of service by virtue thereof, and the salary or compensation thereof, and any separation of a person from the service, or other change therein, and such other information as the Civil Service Commission may require, in order to keep the roster hereinafter. The Civil Service Commission shall keep in its office official rosters of the classified civil service, of the city laborers excepted; and shall enter thereon the name of each and every person who has been appointed to, employed, reduced, or reinstated in, any position in such service, upon such evidence as it may require or deem satisfactory that such person

was appointed to, employed, promoted, reduced, or reinstated in, the service in conformity with the provisions of this act and the rules adopted pursuant thereto. These rosters shall be open to public inspection at all reasonable hours. The roster shall show, in connection with each name, the date of appointment, employment, promotion, reduction, or reinstatement, the compensation of the position, the title of the position, and the date and cause of any termination of such office or employment.

SECT. 22. It shall be unlawful for the Controller of any city of the first class to audit and approve the warrants for the salary of any person in the classified service, unless the Controller shall have previously received notice from the Civil Service Commission that the persons named thereon have been legally appointed.

SECT. 23. No question in any form of application, or in any examination, shall be so framed as to elicit information concerning the political or religious opinions or affiliations of any applicant; nor shall any inquiry be made concerning such opinions or affiliations, and all disclosures thereof shall be discountenanced. No discrimination shall be exercised, threatened, or promised by any person in the Civil Service against, or in favor of, an applicant, eligible, or employee in the classified service, because of his political or religious opinions or affiliations.

SECT. 24. Whoever, after a rule has been duly established and published according to the provisions of this act, makes an appointment to office or selects a person for employment, contrary to the provisions of such rule, or wilfully refuses, or neglects otherwise, to comply with, or to conform to, the provisions of this act, or violates any of such provisions, shall be deemed guilty of a misdemeanor.

SECT. 25. Any commissioner or examiner, or any other person, who shall wilfully, by himself or in co-operation with one or more persons, defeat, deceive, or obstruct any person in respect to his or her right of examination or registration according to this act, or to any rules or regulations prescribed pursuant thereto; or who shall, wilfully or corruptly, falsely mark, grade, estimate, or report upon the examination or proper standing of any person examined, registered, or certified pursuant to the provisions of this act, or aid in so doing, or who shall wilfully or corruptly make any false representations concerning the same, or concerning the person examined; or who shall wilfully or corruptly furnish to any person any special or secret information, for the purpose of either improving, or injuring the prospects or chances of any person so examined, registered, or certified, or to be examined, registered, or certified, or who shall personate any other person, or permit or aid in any manner any other person to personate him or her, in connection with any examination or registration, or application or request to be examined or registered; shall, for each offense, be deemed guilty of a misdemeanor.

SECT. 26. Misdemeanor, under the provisions of this act, shall be punishable by a fine of not less than fifty dollars, nor more than one thousand dollars, in the discretion of the court.

SECT. 27. All officers, clerks, and employees in cities of the first class, holding office on the first day of March, one thousand nine hundred and six, shall be construed to have been appointed under the provisions of this act, and shall hold their offices in accordance therewith.

SECT. 28. All acts and parts of acts of Assembly of this Commonwealth, general, special, or local, in relation to the civil service of cities of the first class, inconsistent

with this act, be, and the same are hereby repealed. It is intended by this act to furnish a complete and exclusive system for the appointment, promotion, reduction, transfer, removal, or reinstatement of all officers, clerks, laborers and other employees in the civil service of the cities of the first class in this Commonwealth.

Approved the fifth day of March, A. D. 1906.

SAML. W. PENNYPACKER.

The foregoing is a true and correct copy of the Act of the General Assembly, No. 18.

ROBERT McAFEE,
Secretary of the Commonwealth.

APPENDIX J

RULES

POWER TO MAKE RULES.

THE ACT OF MARCH 5, 1906:

"SECTION 6. The Civil Service Commission in each city of the first class shall:

First.—Prescribe, amend and enforce rules and regulations for carrying into effect the provisions of this act. All rules so prepared may, from time to time, be added to, amended or rescinded: *Provided*, That all rules shall be approved by the Mayor before they go into effect; but, when so approved, shall not be annulled or changed except by the Commission, with the approval of the Mayor."

In the exercise of the power thus conferred upon the Civil Service Commission, and with the approval of the Mayor of Philadelphia, the following rules became effective on April 19, 1912:

RULE I.

POLITICS AND RELIGION.

1. No discrimination shall be exercised, threatened or promised by any appointing officer or other person in the Civil Service against or in favor of an applicant, eligible or appointee in the classified service because of his political or religious opinions or affiliations.

2. No question in any form of application or in any examination shall be so framed as to elicit information concerning the political or religious opinions or affiliations

of any applicant; and all disclosures thereof shall be discountenanced.

3. No recommendation of an applicant, eligible or employee in the classified service involving a disclosure of his political or religious opinions or affiliations shall be considered by the Commission or by any officer concerned in making appointments or promotions. All such communications shall be discouraged by the Commission or by any such officer, and the writers shall be furnished with a copy of this Rule.

4. No appointing officer or other person in the Civil Service shall use or attempt to use his authority or influence to secure the performance of a partisan political service or action by any subordinate; nor shall any person occupying a competitive or non-competitive position be removed or reduced in pay or position except for just cause, which shall not be religious or political.

RULE II.

CLASSIFICATION OF THE SERVICE.

1. The Civil Service of the City shall be divided into the unclassified service and the classified service. The unclassified service shall comprise:

All officers elected by the people; all heads of departments, whose appointment is subject to confirmation by Select Council; and all persons appointed by name in any statute.

2. The classified service shall comprise all persons not included in the unclassified service.

3. The Commission shall arrange all positions and employments in the classified service of the City in four classes, to wit: The Competitive Class, the Non-Competitive Class, the Exempt Class, and the Labor Class.

4. The Commission shall publish a schedule showing all the positions and employments in the service of the City which have been included in the exempt class, the non-competitive class and the labor class. All other positions in the classified service of every kind and nature are included within the competitive class.

RULE III.

APPLICATIONS.

1. Every applicant for a position shall call in person at the office of the Commission in order to secure an application blank: *Provided, however,* That the Commission may waive this requirement in connection with particular examinations where the Commission has waived its requirements as to residence in the City of Philadelphia. No charge shall be made for furnishing application blanks. All applications shall be filled out and signed in the handwriting of the applicant, except that any person who is unable to write may have his application filled out by some other person. In such cases, the applicant shall attach his mark to the application in the presence of two credible witnesses. If the application is not filled out by the applicant it shall state by whom it was written, giving the name, occupation and address of such person.

2. Every applicant shall furnish under oath the following information:

- (a) His full name, residence and post office address.
- (b) His citizenship, age and place and date of his birth.
- (c) His health and his physical capacity for public service.
- (d) His business and employments and residences for at least the three previous years.
- (e) Such other information as the Commission may require touching the applicant's qualifications and fitness for the public service.

3. The Commission may require in connection with any application such certificates of employers, physicians or others having knowledge of the applicant as the good of the service may require.

4. The Commission may, in its regulations, after consultation with the proper appointing officers, fix age limits, physical requirements and such other qualifications as it may deem for the good of the service as prerequisites for entrance to examinations.

5. No person shall be examined who is not a citizen of the United States and a resident of the City of Philadelphia: *Provided, however,* That the Commission may waive these requirements in connection with particular examinations because of the technical or professional character of the position to be filled, or because of the difficulty of securing applicants who are citizens of the United States and residents of the City of Philadelphia.

- 6. The said Commission may refuse to examine an applicant, or, after examination, to certify an eligible:
 - (a) who is found to lack any of the established preliminary requirements for the examination or position or employment for which he applies;
 - (b) or who is physically so disabled as to be rendered unfit for the performance of the duties of the position to which he seeks appointment;
 - (c) or who is addicted to the habitual use of intoxicating liquors or drugs;
 - (d) or who has been guilty of any crime, or of infamous or notoriously disgraceful conduct;
 - (e) or who has been dismissed from the public service for delinquency or misconduct;
 - (f) or who has made a false statement of any material fact, or practiced or attempted to practice any deception or fraud, in his application, in his examination, or in securing his eligibility.

RULE IV.

EXAMINATIONS FOR POSITIONS IN THE COMPETITIVE AND
THE NON-COMPETITIVE CLASS.

1. Adequate public notice of the time and place of every examination shall be given at least two weeks prior to the date thereof. Such notice shall be posted in a conspicuous place in the office of the Commission and furnished to the leading newspapers in the City. Copies shall also be given to all persons who apply for them in person or by mail.

2. All applicants whose applications have been accepted for positions in the Competitive Class shall be notified of the time and place of examination at least four days prior thereto. Before proceeding to answer the questions, each applicant shall be required to fill out and sign a declaration sheet, giving his full name and address and such other information as may be required by the Commission, and to place this sheet in the official envelope, which shall be sealed by the applicant. The envelope and each paper submitted by the applicant shall be marked with an identical number. At the close of the examination the envelopes containing the declaration sheets shall be placed in a sealed package, which shall not be opened by any one until the marking on all the papers submitted in the examination has been completed; *Provided*, That the Commission may require applicants to attain specified ratings in one or more subjects as a condition precedent to being examined in the remaining subject or subjects, and when such conditions govern any particular examination the envelope containing the Declaration Sheets of the applicants may be opened after the subject or subjects in which the specified rating or ratings are required have been rated, in order to notify successful applicants to appear for examination in the remaining subject or subjects. Any examination paper, except the declaration sheet, bearing

the name of the applicant or any other mark intended to disclose the identity of the applicant, shall be rejected. Specific announcement of the foregoing provisions shall be made at the commencement of every examination; *Provided*, That, when in the discretion of the Commission, the work to be submitted is in the nature of an exhibit of plans or other work previously done by the applicant, and it is impracticable for the applicant to conceal his name, such work may be accepted but must be rated without reference to the identity of the applicant. Examination papers shall be rated on a scale of 100, and the subjects therein shall be given such relative weights as the Commission may prescribe; *Provided*, That in rating experience in any examination no consideration shall be given to the experience which any applicant may have obtained while holding a provisional appointment in any position in the classified service. A schedule of the subjects and their relative weights shall be filed by the Commission with the examination papers. Competitors shall be duly notified of their averages. Any applicant who feels that he is aggrieved by the markings given him on any examination paper may, by written request, have the markings explained or reconsidered, if necessary, in the opinion of the Commission, but all such requests for explanations or reconsiderations must be filed within 30 days after the date of the publication of the eligible list, otherwise they will be denied; *Provided, however*, That no persons certified or appointed from an eligible list prior to the receipt by the Commission of such a request shall be displaced by any correction of the list resulting from such reconsideration.

3. No candidate shall be granted a second or special examination or any second or special trial or test, either written or physical, preliminary to or in connection with

any examination held hereunder, unless it be shown to the satisfaction of the Commission that his failure to appear for, or to gain admission to, or to complete such examination or test, was due to a manifest error or mistake for which the Commission is responsible, the nature of which shall be set forth in its minutes.

RULE V.

ELIGIBLE REGISTER.

1. After the papers in an examination for a position in the Competitive or Non-Competitive Class have been marked, the sealed envelopes containing the declaration sheets of the applicants shall be opened and the names of those applicants who have attained a rating of 70 or upwards shall be entered on the appropriate register in the order of such ratings. If two or more eligibles have the same ratings their names shall be entered on the register in the order in which their applications were received; and if their applications were received on the same day, in alphabetical order.

2. The term of eligibility of an applicant shall be fixed for each list by the Civil Service Commission at not less than one, nor more than three years. An eligible list that has been in force for one year shall terminate whenever a new list, deemed by the Commission to be appropriate, is established. Persons whose names appear on a list about to be terminated shall be notified of the new examination, and shall be informed that upon the establishment of the new list their original eligibility shall cease.

RULE VI.

REQUISITIONS, CERTIFICATIONS AND APPOINTMENTS IN THE COMPETITIVE CLASS.

1. Upon receipt of a requisition from an appointing officer for the names of persons to fill a vacancy in the

Competitive Class, the Commission shall certify from the register most nearly appropriate the names of the four persons thereon who received the highest ratings. Certification shall be made without regard to sex unless sex is specified in the requisition.

2. Within fourteen days of the receipt of any certification the appointing officer shall, with sole reference to the relative qualifications and fitness of the candidates, make a selection from the four names certified to him. If objection shall be made by the appointing officer and sustained by the Commission to one or more of the persons certified for any of the reasons stated in Rule III, Paragraph 6, the names of such persons shall be stricken from the register and the Commission shall certify an additional name for each name so stricken, in the order of their standing on the register, to fill the vacancy or vacancies.

3. The names of the persons not selected shall remain on the register and shall be again certified therefrom, together with one additional name, upon the receipt of another requisition: *Provided, however,* That no name shall be certified more than four times to the same appointing officer for the same or a similar position. After a name has been certified four times it shall be dropped from the register.*

*The following are given as samples of the method of appointment:

1st Certification	3rd Certification
No. 1,	No. 2, Appointed
" 2,	" 3,
" 3,	" 5,
" 4, Appointed	" 6,
2nd Certification	4th Certification
No. 1, Appointed	No. 3, Appointed
" 2,	" 5,
" 3,	" 6,
" 5,	" 7,

Résumé of the above

No. 1, Appointed
 " 2, Appointed
 " 3, Appointed
 " 4, Appointed
 " 5,
 " 6,
 " 7,

The first four having been appointed, the next certification will include Nos. 5, 6, 7 and 8, from which an appointment must be made.

Another example is given below:

1st Certification

No. 1, Appointed
 " 2,
 " 3,
 " 4,

3rd Certification

No. 2,
 " 3,
 " 4,
 " 6, Appointed

2nd Certification

No. 2,
 " 3,
 " 4,
 " 5, Appointed

4th Certification

No. 2,
 " 3,
 " 4
 " 7, Appointed

Résumé of the above

No. 1, Appointed
 " 2,
 " 3,
 " 4,
 " 5, Appointed
 " 6, Appointed
 " 7, Appointed

Nos. 2, 3 and 4, having been certified four times, are now dropped from the list, so that the next appointment would have to be made from a new certification containing Nos. 8, 9, 10 and 11.

4. If an appointing officer desires at one time to fill more than one vacancy from the same register, he shall include in his requisition a written statement of the number of vacancies to be filled. The Commission shall then certify to him the largest number of names that could be certified to fill such vacancies had separate requisition been made

in the case of each vacancy. The appointing officer shall thereupon make appointments from that certification to fill all of the vacancies at the same time; but he shall appoint only such persons from the list certified to him as he could have appointed had he filed separate requisition for each separate vacancy.

5. The appointing officer shall notify the person selected from the names certified to him by the Commission that he has been appointed. The person so notified shall at once advise the appointing officer whether or not he will accept the appointment. He shall then receive from the appointing officer a certificate of appointment for a probationary period of three months. If his conduct or capacity during this probationary period shall not have been satisfactory to the appointing officer, the probationer shall be notified in writing that he will not receive absolute appointment, whereupon at the close of the probationary period his employment shall cease. If no such notification is sent, the retention of the appointee in the service shall be equivalent to his final appointment. A probationer may be removed at any time within the three months by the same procedure prescribed for the removal of employees who have received final appointment.

6. If an eligible who has been certified for appointment shall decline, without stating a reason satisfactory to the Commission, his name shall be stricken from the register. If his declination is on account of the location of the office or on account of the salary, the eligible shall not be again certified for the same locality or for the same or less salary without the consent of the Commission.

RULE VII.

PROVISIONAL APPOINTMENTS.

Whenever there are urgent reasons for filling a vacancy in any position in the competitive class, and there is no ex-

isting eligible register, the appointing officer may nominate a person to the Commission for non-competitive examination; and if such nominee shall be certified by the Commission as qualified, after such non-competitive examination, he may be appointed provisionally to fill such vacancy, until a selection and appointment can be made after competitive examination; but such provisional appointment shall not continue for a longer period than three months nor shall successive temporary (provisional) appointments be made to the same position, under this provision.

As soon as an eligible register is secured for a position filled by provisional appointment under the foregoing paragraph, the Commission shall certify to the appointing officer in the usual manner the names of the four persons standing highest on the register, and the appointing officer shall make the appointment in the manner hereinbefore provided within fourteen days of the receipt of such certification. As soon as such appointment has been made, the provisional appointment shall terminate. If no such appointment shall be made the provisional appointment shall terminate at the expiration of fourteen days from the receipt of the certification of eligibles.

RULE VIII.

APPOINTMENT TO POSITIONS REQUIRING EXCEPTIONAL SCIENTIFIC, PROFESSIONAL OR EDUCATIONAL ATTAINMENTS.

1. "In case of vacancy in a position in the competitive class where peculiar and exceptional qualifications of a scientific, professional or educational character are required, and upon satisfactory evidence that for specified reasons, competition in such special case is impracticable, and that the position can be best filled by the selection of

some designated person of high and recognized attainments in such qualities, the said Commission may suspend the provisions of the statute requiring competition in such case, but no such suspension shall be general in its application to such place, and all such cases of suspension shall be reported in the annual report of the Commission, with the reasons for the same." (Act of March 5, 1906, Section 15, Clause 2.)

2. No appointment shall be permitted by the Commission under the provisions of this Rule until after public hearing, at which citizens of the City shall have an opportunity to present such facts with reference to the proposed appointment as are relevant and material. At least five days' notice of every such public hearing shall be given, in which shall be stated the position to be filled and the name of the person whose appointment is sought.

3. Whenever an appointing officer seeks to make an appointment under the provisions of this Rule, he shall submit to the Commission such evidence as he may deem relevant relating to the attainments of the person sought to be appointed. After the consideration of such evidence and after the holding of a public hearing as above provided, the Commission shall determine, first, whether it is practicable to hold a competitive examination for the position in question; and, second, whether, if it is impracticable to hold a competitive examination, the interests of the public service will be advanced by the appointment of the person nominated by the appointing officer.

RULE IX.

TEMPORARY APPOINTMENTS.

Where the service to be rendered by an appointee is needed for a period not exceeding one month, and the need of such service is important and urgent, the appointing offi-

cer may request the Commission to authorize him to make a temporary appointment. The Commission shall forthwith send to the appointing officer a copy of the appropriate register from which he may select for such temporary service any person without regard to his standing thereon. Successive temporary appointments to the same position shall not be made under this provision. The acceptance or refusal by an eligible of temporary appointment shall not affect his standing on the register, nor shall the period of temporary service be counted as a part of his probationary service in case of subsequent appointment to a permanent position, nor shall the acceptance of temporary service confer upon the appointee any privilege of promotion, transfer or reinstatement to any other position in the service. No such temporary appointment shall continue for more than one month.

RULE X.

REINSTATEMENT.

1. Reinstatement is not a right given to the applicant, but is merely one of the ways by which an appointing officer may fill a vacancy. The initiative in reinstatement shall rest with the head of the department in which the person formerly served.

2. A person separated from a position in the Competitive Class *without delinquency or misconduct* may be reinstated in the department or office in which he formerly served after requisition by the appointing officer and subsequent certification by the Commission, subject to the following limitations:

(a) The separation must have occurred within one year next preceding the date of the receipt by the Commission of the requisition of the head of the department or office for such certification.

(b) No person may be reinstated to a position requiring an examination different from that required for the position from which he was separated.

(c) The Commission shall not issue a certificate of reinstatement unless it is satisfied that the conditions of good administration require the reinstatement to be made, and that the person possesses the physical and other qualifications necessary in the position to be filled.

3. A person separated from a position in the Competitive Class *by reason of delinquency or misconduct* may be reinstated in the department or office in which he formerly served after requisition by the appointing officer and subsequent certification by the Commission. Such reinstatement must comply with the clauses (a), (b) and (c) of Section 2 of this rule and be subject to the further limitation:

(d) The appointing officer seeking to make the reinstatement must satisfy the Commission that the charges against the person removed were not true or the reason for which the person was removed was not adequate and that the dismissal was not justified.

4. A person separated from a position in the Non-Competitive or Labor Class *without delinquency or misconduct* may be reinstated to a position in the same class in the department or office from which he was separated under the same limitations prescribed by this rule for the reinstatement of persons separated without delinquency or misconduct from positions in the Competitive Class.

5. A person separated from a position in the Non-Competitive or Labor Class *by reason of delinquency or misconduct* may be reinstated to a position in the same class in the department or office from which he was separated,

under the same limitations prescribed by this rule for reinstatement of persons separated by reason of delinquency or misconduct from positions in the Competitive Class.

6. Reinstatements shall not be made except as above provided.

RULE XI.

TRANSFERS.

1. The initiative in a transfer rests with the head of the department in or to which transfer is sought, and the authority of the Commission is limited to determining the eligibility of the person for transfer upon the receipt of a requisition from the head of the department. A transfer refers to a change of status of an employee whereby he or she vacates a position in one office or department or bureau and assumes the duties of a position in a different office or department, or in a different bureau either in the same department or in a different department. All changes in status where an employee remains in the same office should be considered under Rule XII, Promotions.

2. No person shall be transferred to any position, subject to a competitive examination, unless he shall have previously passed an open competitive examination equivalent to that required for such position.

3. No person appointed without competitive examination to a position in the competitive class at the time of such appointment, and no person in the unclassified service or in a position in the non-competitive, exempt or labor classes, shall be transferred to a position in the competitive class.

4. Unless otherwise specifically provided in this rule, no person shall be transferred except on certificate of the Commission previously obtained, and subject to the following limitations:

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(a) He must have served one year in or under the department or office from which transfer is proposed.

(b) He must be within the age limitations and possess the physical qualifications prescribed for examination for the position to which his transfer is proposed.

(c) He must pass an appropriate examination whenever different tests are prescribed for original entrance to the position to which transfer is proposed.

(d) He shall not be transferred unless, in the judgment of the Commission, he possesses experience, qualifications or training which are required for the proper performance of the duties of the position to which transfer is proposed, and which render necessary, in the interests of the service, the filling of the position by his transfer, rather than by an original appointment or promotion.

(e) He shall not be transferred except upon the written request of an appointing officer and the written consent of the head of the department in which the person is serving.

5. Any person may be transferred to a position in which he was formerly employed, or to any position to which a transfer could be made therefrom, if since his transfer he has been continuously in the service of the City. Such transfer may be made without compliance with clauses (a), (b) and (c) of Section 4 of this Rule.

6. A temporary detail for a reasonable period of an employee for duties other than those for which he was appointed is not to be construed as a transfer, in the meaning of the Civil Service Act and of this Rule.

*Assignments of employees of Bureau of Police or Bureau of Fire or Bureau of Surveys to perform the same duties in various districts, and similar changes in other

bureaus of the location of the employment and not of the position held, are not to be construed as transfers, but as details, and may be made by an appointing officer without notice to the Commission.

* 7. Transfers may also be made between firemen, drivers, laddermen and hosemen, receiving maximum salary, and tillermen and enginemen; but only upon requisition to and certification from the Commission.

8. Where the designation of a position in the competitive class is changed by ordinance of Councils or otherwise, but no substantial change is made in the duties or salary of the person holding the position, he shall be considered as having been automatically transferred to the new position; and shall not by such transfer lose any rights of promotion or transfer to which he was entitled in the former position.

9. All transfers shall be immediately reported to the Commission.

RULE XII.

PROMOTIONS.

1. The term "promotion" as used in these rules and in the regulations relating thereto, means either advancement from the position occupied to a higher position, the duties of which are of a higher grade, or an increase in salary, such increase not necessarily carrying with it any change in duties or responsibility.

2. Promotions shall be based upon the merit and fitness and competitive tests or examinations shall, as far as practical and useful, be established to test merit and fitness for promotion in the classified service.

3. All promotions of employees of the City Government coming under the Act of March 5, 1906, shall be made in any department in the following manner:

*These Rules have some of the characteristics of regulations.

(a) They shall be from positions in one department to higher positions in the same department.

(b) Promotion appointments shall be for a probationary period of three months. If the appointee proves unsatisfactory at the expiration of that time the appointing officer shall so notify him in accordance with Section 8 of the Act of March 5, 1906, and shall state that he has been reduced to his former position, if such position still remains vacant. The appointing officer shall also notify the Commission of the same.

(c) After a Promotion Examination shall have been held and a list of eligibles established the appointing officer shall make requisitions and appointments in the manner provided for making requisitions and appointments in the Competitive Class and according to the manner prevailing for the appointment of those first entering the service.

(d) If an employee has been appointed to a position at a salary less than the maximum salary for which he passed an open competitive examination he shall be eligible for promotion at any time to any position within the department for which the eligible list upon which his name occurred would be appropriate during the existence of said eligible list; *Provided*, That no such promotion shall be made unless the name of the employee desired to be promoted is among the first four names having the highest averages on the eligible list and not appointed to the maximum salary at the time said promotion is desired to be made.

(e) Whenever there are less than four persons holding positions of the same or similar character and salary in a department any one of the three or less employees may be promoted without examination upon the prior approval of the Commission to the vacancy of the higher position of

the same or similar character, if the proposed increase in salary conforms to the following schedule: If the present salary of the applicant is not over \$1,300 per annum the increase shall not exceed \$200 per annum. If the present salary of the applicant is over \$1,300 per annum the increase shall not exceed 15 per cent of the present salary of the applicant; *Provided*, That successive promotions shall not occur within six months of each other aggregating more than the maximum provided for above; *Provided*, That where there is but a single position requiring unusual experience and attainments in any Department, and such position has been legally held by the same person for at least seven years, and if the appointing officer is desirous, in recognition of the unusual, competent and faithful services of such person, of inducing the municipal legislative power to increase the salary of the position above referred to and described, and is successful in such desire and effort, and if such increase should be to such an amount that a competitive examination would be required under the provisions of this rule, the Civil Service Commission shall, in such case, determine whether or not they will permit such promotion without requiring the incumbent above described to undergo a competitive or other examination.

4. The Commission is empowered to determine whether a change in grade or an increase in salary constitutes a promotion. It shall establish by its regulations lines or a system of promotion and may provide, for reasons to be entered in its minutes, that original entrance examinations shall be held to fill any position provided for by promotion. Unless the Commission shall otherwise provide, promotion examinations shall be subject to the provisions of these rules governing entrance examinations. No promotion examination shall be held unless there are four or more eli-

gible competitors. If there are not four competitors, or if all competitors fail to pass, an original entrance examination shall be held. Where an eligible list of less than four names shall result from a promotion examination, an open competitive examination shall—unless the appointing officer is willing to make a selection from the names of those who have passed the examination—be held, and after said open competitive examination, and the ratings of the applicants have been fixed, the resulting eligibles shall, in the order of their averages, form the eligible list for said position.

5. No person shall be eligible for promotion to a vacancy in any grade, either with or without promotion examination, unless such person has served in the next lower grade as defined in such schedule or lines or systems of promotions as the Commission, by regulation, may establish by actual employment for at least six months; *Provided*, In case of promotion in the Police or Fire Services the six months service required may have been in either the next lower or two next lower grades.

6. The Commission is empowered to prescribe by its regulations efficiency standards and tests in connection with promotions.

RULE XIII.

REMOVALS AND REDUCTIONS.

1. In making removals or reductions and any other punishments, penalties like in character shall be imposed by the appointing officer of the respective departments for like offences.

2. No person in the competitive class or non-competitive class shall be removed, discharged or reduced in pay or position except for just cause, which shall not be religious or political.

3. No policeman (including patrolmen and mounted patrolmen) or fireman shall be removed at any other time than at the close of his probation period except in accordance with the decision of a Court of Trial or Inquiry, duly convened in accordance with the provisions of the City Charter and of the regulations of the Department of Public Safety. No other person in the competitive or non-competitive classes shall be removed or reduced in pay or position at any other time than at the close of his probationary period until he shall have been furnished by the removing officer with a written statement of the reasons for such action and been allowed an opportunity of at least four days to give the removing officer such written answer as the person sought to be removed may desire. Every removing officer shall consider such written answers as may be filed to notifications of removals and shall notify the person sought to be removed whether or not he has been finally discharged.

4. The Director of Public Safety shall cause to be certified to the Civil Service Commission the decision of every Court of Trial or Inquiry which determines that a policeman or fireman shall be removed or reduced in pay or position. Whenever any person other than a policeman or fireman is removed, the removing officer shall forthwith furnish to the Commission a copy of the statement of the reasons for such removal, a copy of such written answer as the removed person has filed with him, and a copy of the removing officer's notification of final action.

5. The Commission shall enter upon its public records the decisions of the Courts of Trial or Inquiry and the notifications of removing officers, together with the answer thereto of the person sought to be removed.

6. The Commission shall have jurisdiction to investigate any removal or reduction where it is alleged, with

offer of proof, that the procedure required by this rule has not been followed, or that any of the provisions of the Civil Service Act or of these rules have been violated.

7. The violation of any of the provisions of the Civil Service law or of these rules by any person in the classified service shall be cause for the dismissal of such person from the service. Any person dismissed from the service for delinquency or misconduct shall not be eligible for original appointment in any capacity in any department of the municipal service within one year from the date of such dismissal.

RULE XIV.

EXEMPT CLASS.

1. The following are included in the exempt class under the terms of Section 12 of the Civil Service Act:

a. The assistant directors of the executive departments.

b. One secretary and one confidential clerk to the Mayor and one confidential clerk to the director of each executive department.

2. No other position shall be included in the exempt class unless the Commission shall have found that it is impracticable to fill it through competitive or non-competitive examinations.

3. No position shall be classified by the Commission in the exempt class except after a public hearing by the Commission. The Commission shall give at least ten days' public notice of any hearing to determine whether or not a position shall be placed in the exempt class. Such notice shall be posted on the public bulletin board in the office of the Commission, and shall be mailed to at least five leading newspapers in the City of Philadelphia. Such notice shall specify the position which is sought to be

classified as exempt. Every hearing of the Commission to determine whether or not a position shall be classified as exempt shall be open to the public, and at such hearings any taxpayer or citizen of the City shall have the right to be heard either in person or by counsel in favor of or against the proposed exemption.

4. Appointments to positions in the exempt class may be made without examination, but must be certified to the Commission by the appointing officer in the manner provided for certification of other appointments.

5. The positions which are classified as being in the exempt class at the date of adoption of these Rules are specified in Schedule "A," attached hereto.*

RULE XV.

APPOINTMENTS TO THE NON-COMPETITIVE CLASS.

1. The Commission shall include in the non-competitive class only such positions as are not in the exempt class or the labor class and which it is impracticable, in the judgment of the Commission, to include in the competitive class.

2. Examinations for positions in the non-competitive class shall be of such a character as will determine whether or not the applicants possess the requisite knowledge, ability and physical qualifications to enable them to perform the duties of the position.

3. Every person who applies for a position in the non-competitive class shall be furnished a particular form of application upon which shall be stated the fact that the

*NOTE:—This pamphlet does not contain the list of exempt positions which are a part of the Rule as adopted by the Commission and approved by the Mayor. This list of exempt positions appears in Schedule A, attached to the original rules, and can be seen at any time upon application to the Commission.

appointing officer has a right to select any person who passes the examination whether or not his name is among the four at the head of the register.

4. An appointing officer in making appointments to positions in the non-competitive class has the right to select for appointment any person who has passed the examination, but his decision must be based solely upon the merit and fitness of the person selected. Appointments to positions in the non-competitive class shall be made for a probationary period of three months in the manner prescribed in Rule VII.

RULE XVI.

APPOINTMENTS TO THE LABOR CLASS.

1. The Commission shall not classify in the labor class any position the duties of which require higher attainments and greater knowledge than those possessed by ordinary unskilled laborers.

2. No person who is employed in any position in the labor class shall be assigned to perform any work or duties usually performed by persons in the competitive or non-competitive classes.

3. The Commission shall provide a special form of application for positions in the labor class upon which the candidate shall be required to state, under oath, the facts in regard to his age, residence, citizenship, physical condition, previous occupations and experience, and to furnish certificates from two persons who shall be former employers, if possible, stating their opinion as to his fitness to perform unskilled labor and with regard to his honesty, industry and sobriety. If the application is not in the handwriting of the applicant, it shall state by whom it was written, giving the name, occupation and address of such person.

4. When applications have been filed they shall be examined and rated to determine whether or not the candidate possesses those qualifications which the Commission has determined are requisite for the work to be performed. The Commission may, by suitable regulations relating to particular positions, add such oral, practical, medical and physical tests, and may adopt such methods for the verification of the facts stated in the applications as it may deem advisable.

5. The names of those who fulfill the requirements established by the Commission and pass the requisite examinations shall be placed on the proper labor register in the order of their markings upon the tests prescribed by virtue of Section 4 of this Rule. The term of eligibility of applicants in the Labor Class shall be two years beginning with the date of the publication of the applicant's name as an eligible. At the end of that time persons whose names remain upon the Eligible List may be notified to appear for re-examination in order to continue the term of eligibility for another period of two years. If two or more eligibles have the same ratings their names shall be entered on the register in the order in which their applications were received; and if their applications were received on the same day, in alphabetical order.

6. The appointing officer, in making requisitions, shall state the kind of labor needed, the pay, probable length of employment, and the number of persons to be employed. The Commission shall certify, in the order of their standing on the appropriate labor register, the names of double the number of persons to be employed. The appointing officer shall appoint the number actually needed, making his appointments in the exact order of their standing on the registers. No name shall be certified more than four times to the same appointing officer.

7. In case of emergency, where it is not practicable to secure laborers from the appropriate labor registers with sufficient promptness, or in case the list is temporarily exhausted, the appointing officer may employ, subject, however, to the subsequent approval of the Commission, as many persons as may be required; but such employments shall absolutely cease as soon as appointments can be made from the registration list. Successive emergency appointments of the same person shall not be made.

8. Whenever any laborer has been separated from the service, the appointing officer shall report to the Commission the fact of such separation, stating the position in which the laborer was employed. His name shall at once be placed on a preferred register for reinstatement, and shall remain thereon for a period of one year. Upon requisition to fill any position for which any such preferred labor register is appropriate, certification shall be made therefrom in preference to certification from any other register until such preferred labor register is exhausted. Appointments from such preferred labor register shall be made according to the priority of original appointment in the city service.

9. Separate labor registers shall be established for different positions in the labor class only by order of the Commission, evidenced by a minute duly adopted, and no such separate registers shall be created unless, in the opinion of the Commission, the work to be performed cannot be properly done by persons appointed from any existing register: *Provided, however,* That the Commission shall maintain separate labor registers for men and for women.

10. A person who has served with fidelity for six months in a position in the labor class may, upon the certificate of the Commission, be transferred to any other position therein for which he is found to possess such qualifications

as are required in the case of original appointment to such other positions, but all such transfers shall be immediately reported to the Commission.

11. No person employed in the labor class shall be promoted or transferred to any position in the competitive or non-competitive classes.

RULE XVII.

FRAUD AND PENALTIES.

1. "Whoever, after a rule has been duly established and published according to the provisions of this Act, makes an appointment to office or selects a person for employment contrary to the provisions of such rule, or willfully refuses, or neglects otherwise to comply with, or to conform to, the provisions of this Act, or violates any of such provisions, shall be deemed guilty of a misdemeanor." (Section 24, of the Act of March 5, 1906.)

2. The violation of any of the provisions of the Civil Service Law or these rules by any person in the classified service shall be a good cause for dismissal of such person from the service.

3. Fraud shall vitiate and annul any action of the Commission, and also any appointment, promotion, reduction, transfer, removal or reinstatement by any appointing officer.

RULE XVIII.

DUTY OF CITY OFFICERS TO AID THE COMMISSION.

1. "It shall be the duty of the Mayor and heads of departments of every city of the first class to cause suitable and convenient rooms and accommodations to be assigned or provided, and to be furnished, heated, and lighted, for carrying on the work and examinations of the Civil Service Commission. The Civil Service Commission may or

der from the proper authorities the necessary stationery, postage stamps, and official seal and other articles to be supplied, and the necessary printing to be done, for its official use. It shall be the duty of the officers of every city of the first class to aid the said Civil Service Commission in all proper ways in carrying out the provisions of this act, and to allow the reasonable use of public buildings, and to heat and light the same for holding the examinations and investigations, and in all proper ways to facilitate the same." (Section 5 of the Act of March 5, 1906.)

2. It shall be the duty of every person in the Civil Service and of every applicant or eligible for a position therein to give to the Commission all proper information and testimony in regard to matters inquired of arising under the Civil Service Act and Rules, and to subscribe such testimony and make oath to the same before some officer authorized by law to administer oaths.

RULE XIX.

OFFICIAL ROSTER.

1. Each *Appointing Officer*, in accordance with Section 21, of the Act of March 5, 1906, is required forthwith to notify the Civil Service Commission of all appointments, in each case giving the name of the appointee or employee, his address, the title of his office or employment, the date of commencement of service by virtue thereof, the salary and compensation thereof, and the appropriation ordinance and item under which it is paid; and in like manner to notify the said Commission of any separation of a person from the service, or other change therein, and such other information as the Civil Service Commission may from time to time require in order to keep the roster of appointees or employees.

2. Each appointing officer shall furnish to the Commission, upon request, a complete list of all the positions and employments under his authority, together with the names, designations, compensations, duties and dates of appointment or employment of all persons serving therein, and such other information as the Commission may require in order to keep its roster. (See Section 21, Act of March 5, 1906.)

3. "The Civil Service Commission shall keep in its office official rosters of the classified Civil Service of the City, laborers excepted; and shall enter thereon the name of each and every person who has been appointed to, employed, reduced, or reinstated in, any position in such service, upon such evidence as it may require or deem satisfactory that such person was appointed to, employed, promoted, reduced or reinstated in, the service in conformity with the provisions of this Act and the rules adopted pursuant thereto. These rosters shall be open to public inspection at all reasonable hours. The rosters shall show, in connection with each name, the date of appointment, employment, promotion, reduction or reinstatement, the compensation of the position, the title of the position, and the date and cause of any termination of such office or employment." (From Section 21, Act of March 5, 1906.)

4. Every appointing officer shall report in detail to the Commission, whenever and in such manner as it may prescribe, all changes in the service under his authority, whether they affect positions or employees that are classified or unclassified. Requisitions, appointments, reinstatements, transfers, promotions, removals, reductions, and all other changes shall be evidenced by cards or other forms of such size and arrangement as shall from time to time be prescribed by the Commission.

The following are given as samples of forms prescribed by the regulations of the Commission:

REQUISITION, COMPETITIVE CLASS.

DEPARTMENT OF

Philadelphia, ...19

To the Civil Service Commission:

A vacancy now exists in the position of.....

.....Bureau of.....Salary
\$.....Appropriation Item.....

Will you certify to me the four names standing highest on the appropriate eligible register? Cause of vacancy.....

Name of last incumbent.....

Director.

NOTICE OF APPOINTMENT. COMPETITIVE CLASS.

DEPARTMENT OF

Philadelphia, ...19

To the Civil Service Commission:

Of the.....names certified on.....

I have selected.....

for appointment, to date from.....

to the position of.....Bureau of.....

Salary is Cause of vacancy.....

Name of last incumbent.....

Director.

NOTICE OF PROMOTION. COMPETITIVE CLASS.

DEPARTMENT OF

Philadelphia, ...19

To the Civil Service Commission:

.....residing
at....., having

been certified to me by you on.....

after an examination for promotion, I hereby notify you that I

have promoted him, and his promotion is to date from.....

.....The title of the position

is Bureau of.....

at a salary of.....Appropriation Item

.....The present vacancy was caused by

.....of last incumbent (name).....

Director.

NOTICE OF TRANSFER. COMPETITIVE CLASS.

DEPARTMENT OF

Philadelphia, ...19

To the Civil Service Commission:

The name of.....
 residing at....., having
 been certified to me as eligible for transfer from the position of
 of....., Bureau
 of..... at a salary of.....
 Appropriation Item..... to the position of
 Bureau of.....

I hereby notify you that I have made the transfer as stated
 to date from.....
 The present vacancy was caused by.....
 of last incumbent (name).....

Director.

NOTICE OF REINSTATEMENT. COMPETITIVE CLASS.

DEPARTMENT OF

Philadelphia,.....19

To the Civil Service Commission:

..... residing at
 having
 been certified to me by you on.....
 for reinstatement, I hereby notify you that I have reinstated
 him, to date from.....
 The title of the position is.....
 Bureau of....., salary \$.....
 per Appropriation Item.....

Director.

RULE XX.

CITY CONTROLLER.

"It shall be unlawful for the controller of any city of
 the first class to audit and approve the warrants for the
 salary of any person in the classified service, unless the
 controller shall have previously received notice from the
 Civil Service Commission that the persons named thereon

14 cs

have been legally appointed." (Act of March 5, 1906, Section 22.)

All appointments, reinstatements, transfers, promotions, removals and reductions, approved by the Commission, shall be certified to the City Controller, which certification will be his warrant for carrying out the above section of the Act of March 5, 1906.

If the Commission shall find that any person is holding a position in violation of the Civil Service Act or of the rules promulgated in accordance therewith, it shall certify the facts to the proper appointing officer. If a satisfactory explanation be not made to the Commission within ten days thereafter or such person be not dismissed within the said period, the Commission shall certify the facts to the City Controller, who shall not audit and approve any warrant for the salary or wages of such person thereafter accruing.

RULE XXI.

COMMUNICATIONS.

All communications, understandings, or agreements between the various departments and offices coming under the operation of the Civil Service Act of March 5, 1906, and the Civil Service Commission, shall be in writing.

RULE XXII.

PUBLICITY.

Examinations will be open to representatives of the press, and citizens generally, but only in such numbers as do not, in the opinion of the Commission or the examiners, interfere with the conducting of the examinations, but said spectators shall at no time have any communication with the applicants or divulge the names of the same.

The Commission shall "Keep minutes of its own proceedings, and records of its examinations and other official action. All recommendations of applicants for office, received by the said Commission, or by any officer having authority to make appointments to office, shall be kept and preserved; and all such records, recommendations of former employers excepted, and all written causes of removal filed with it, shall, subject to reasonable regulation, be open to public inspection." (Section 6, Act of March 5, 1906.)

RULE XXIII.

REGULATIONS.

The Commission shall have authority to prescribe and enforce suitable regulations for carrying into effect the provisions of these Rules and the Act of March 5, 1906, and for the guidance of its own action and that of its subordinates.

The Commission shall furnish the heads of the respective departments with copies of regulations affecting said department when and as adopted.

RULE XXIV.

AMENDMENT TO RULES.

These Rules may from time to time be added to, amended or rescinded by the Commission with the approval of the Mayor: *Provided, however,* That such rules shall not be added to, amended or rescinded by the Commission at the meeting at which such action is proposed, and no final action shall be taken thereon until after a public hearing of which the Commission shall give five days' public notice.

Adopted by the Civil Service Commission of the City of Philadelphia and submitted to the Mayor of the City of Philadelphia for his approval on the twenty-sixth day of March, A. D. 1912.

FRANK M. RITER,
President.

PETER BOLGER,
Secretary.

LEWIS H. VAN DUSEN,
Commissioners.

Approved April 19, 1912.

RUDOLPH BLANKENBURG,
Mayor of Philadelphia.

With amendments adopted by the Commission, and approved by the Mayor on the following dates: May 28, 1912; February 20, 1913; April 28, 1913, and July 21, 1913.

APPENDIX K

QUESTIONS FOR EXAMINATIONS DURING THE YEAR 1912

CLERICAL SERVICE

BOOKKEEPER, DEPARTMENT OF SUPPLIES,
\$1,000-\$1,200 per annum. June 3, 1912.

Training and Experience—Weight .5.

Any false statement made by the applicant in answering these questions will be regarded as good cause for excluding him from the eligible list or for removal or discharge during probation or thereafter. 1. What is your age? 2. (a) In what grade were you when you left the grammar school? (b) What high school did you attend? How long? What course? (c) What technical training have you had as apprentice, or in business school, or in college, or in technical school? 3. In general, what is your occupation? How long have you followed it? 4. When, where, for whom and how long have you worked at this occupation, and what wages or salaries have you received in each case? 5. From what positions have you been discharged for cause, and what were the causes? 6. State exactly and in detail the kind of work you were doing in each of the leading positions you have filled in the past five years. 7. Give the particulars about any special work you have done in addition to the above which tends to qualify you for the position you are now seeking.

Note.—The above experience sheet is used for all positions in the Clerical Service.

Arithmetic—Weight 2.

1. Add \$157,926.04, \$52.19, \$9,261,549.62, \$1,694,247.57, \$5,216.90, \$425.86, \$52.95, \$1,076.87, \$27,-

214.95, \$276,421.87, \$932.17, \$4.26, \$259,426.74, \$9,-275.18. Write the sum in words. 2. From $216\frac{7}{8}$ acres of land, lots of 21 acres, $16\frac{3}{4}$ acres, $261\frac{1}{2}$ acres, $41\frac{1}{4}$ acres and $16\frac{3}{8}$ acres were sold. How many acres remained unsold? 3. A dealer paid $\frac{3}{8}$ of $\$78\frac{3}{4}$ for $\frac{3}{4}$ of 25 cords of wood. What was the cost per cord? 4. If a wheelman travels 10.3 hours per day, how many days will be required for him to travel 558.0025 miles at the rate of 7.88 per hour? 5. An agent sold 2,000 bushels clover at \$7.85 per bushel on commission at 5 per cent. and 1,200 bushels medium red at \$5.20 on commission of $2\frac{1}{2}$ per cent., taking the purchaser's three-months' note for the amount of sales. If the agent charges 4 per cent. for his guaranty of the note, how much does he earn by the transaction? 6. On July 16, 1903, \$2,750 was borrowed at 5 per cent. interest. And on the same day I loaned it at $7\frac{1}{2}$ per cent. interest. If full settlement is made January 4, 1905, how much will be gained? 7. A note for \$1,200, dated Boston, Mass., March 4, 1903, and payable three months after date, was discounted April 5, at 5 per cent. Find the bank discount and proceeds. 8. C. A. Martin, Albany, N. Y., bought of Eureka Hardware Company, of Philadelphia, February 18, 1903, on account, 30 days, 2 per cent. 10 days, 1,800 feet iron pipe at 32 cents, less 25 per cent. and 10 per cent.; 65 valves at \$2, 130 elbows at 20 cents, less 20 per cent and 10 per cent; 290 yards asbestos at 54 cents. Find the net amount of the bill February 20, 1903.

Bookkeeping—Weight 2.5.

1. John Walters began business on May 1, 1910, with a cash investment of \$2,500. May 1, bought of J. B. Anders & Sons 200 yards fancy cassimere at \$1.50 per yard, 200 yards black doeskin at \$3 per yard. Sold A. & J. Davis 100 yards fancy cassimere at \$2. Paid J. B.

Anders & Sons on account \$800. May 2, bought of M. Murray & Co. 200 yards fancy cassimere at \$3, 200 yards cassimere at \$2. Sold H. S. Mann 100 yards black doeskin at \$4.75. Paid M. Murray & Co., on account, \$250. May 5, sold J. T. Maxwell 195 yards cassimere at \$2. May 4, sold Thomas Jackson 20 yards fancy cassimere at \$3.50. Bought of John Wells & Co., 50 yards fancy cassimere at \$2, 65 yards black doeskin at \$3.25. Paid John Wells & Co., on account, \$100. (a) Assuming the above transactions, open and work up a set of double-entry books. Indicate clearly the titles of the books you would use. (b) Close your ledger and make out a trial balance. 2. If John Walters desired to give his note at 60 days in payment of a bill of \$200 to James Smith, write out a promissory note for this transaction. 3. Write out a check on the Bank of Philadelphia in payment of the above note when it becomes due. Be careful to have the check properly dated. 4. Give the meaning of each of the following terms: Appraisal, consignment, insolvency, statute, depository.

Letter Writing—Weight 1.5.

Write a letter to the Civil Service Commission of Philadelphia of not less than 150 words on the following subject: Discuss the proposition of the City's ownership and control of wharves and docks.

Mechanical arrangement, adherence to the subject and expression will be considered in marking this subject. Do not sign your name to the letter. Use your examination number instead.

Penmanship—Weight 1.5.

Make a copy of any twelve lines from the above letter. Penmanship will be marked from this.

Spelling—Weight 1.

1. Promissory. 2. Debit. 3. Creditor. 4. Legible.
 5. Successor. 6. Receipt. 7. Annual. 8. Assessor. 9.
 Assets. 10. Liability. 11. Municipal. 12. Monetary.
 13. Financial. 14. Merchandise. 15. Chargeable. 16.
 February. 17. Incompetent. 18. Delinquent. 19. Sep-
 arate. 20. Comparative.

Stenography and Typewriting—Weight 1.

Make an exact copy of the following:

EXPORTS TO THE UNITED STATES.

The following statistics, compiled from official returns, show a remarkable increase in the principal exports from Ceylon to the United States during the nine months ended September 30, 1909, as compared with the same months in 1908:

Articles	1908	1909
	Pounds	Pounds
Black tea	8,501,570	10,384,438
Green tea	2,505,332	3,165,908
Rubber	150,055	359,162
Cacao	22,960	116,704
Cardamons	2,960	55,006
Cocosnut oil	12,965,224	13,836,368
Desiccated cocoanuts	3,098,589	4,253,921
Plumbago	11,228,112	27,484,912
Clitronella oil	—	410,985

In a statement showing the imports into Ceylon of cotton piece goods, iron, manure, kerosene, wines and spirits, lamps, crockery and hardware, etc., from the several countries no mention is made of imports from the United States.

BOOKKEEPER, ANY DEPARTMENT.

\$600 to less than \$1,000 per annum. July 18, 1912.

Training and Experience—Weight 1.

(See page 215.)

Arithmetic—Weight 2.

1. SUMMARY OF DAILY SALES.

April	Lace	Gloves	Shoes	Dry Goods	Clothing	Total
Monday -----	\$237 31	\$218 19	\$106 35	\$382 55	\$627 71	—
Tuesday -----	228 80	187 57	510 45	811 82	541 23	—
Wednesday -----	288 84	125 92	888 54	676 83	680 29	—
Thursday -----	143 54	687 02	161 60	357 13	423 09	—
Friday -----	586 51	149 75	119 25	672 83	387 75	—
Saturday -----	848 49	221 73	122 16	520 89	551 45	—
Total -----						

2. A. has \$950, which is \$275 more than I have, and I have \$300 more than B. How much have we together?
3. Find the total cost of the following articles: 870 pounds coffee at 33 $\frac{1}{3}$ cents, 240 pounds raisins at 16 $\frac{2}{3}$ cents, 160 pounds seed at 6 $\frac{1}{4}$ cents, 192 yards lining at 8 $\frac{1}{3}$ cents, 88 yards lace at 87 $\frac{1}{2}$ cents, 1,152 yards linen at 37 $\frac{1}{2}$ cents.
4. The list price of a bill of goods was \$1,080 and the discounts were 25, 20 and 10 per cent. Find the amounts of the discounts and the net amount of this bill.
5. If I pay \$3.20 for 20 gallons of vinegar, how many gallons of water must be added that 40 per cent. profit may be realized by selling it at 15 cents per gallon?
6. Find the total amount of discounts for the following at 6 per cent.: \$300 for 42 days, \$200 for 66 days, \$10 for 75 days, \$3,000 for 142 days, \$240 for 21 days.
7. Find the total amount of interest on \$720 for 9 days at 6 per cent., \$750 for 30 days at 4 $\frac{1}{2}$ per cent., \$600 for 42 days at 3 per cent., \$504 for 54 days at 6 per cent., \$1,124 for 15 days at 3 per cent.

Bookkeeping—Weight 3.

1. B. F. Preston commenced business January 1, 1912, with a cash capital of \$5,000. January 2, bought for cash of E. H. Fellows, Albany, 100 barrels flour at \$8 per barrel. Sold W. H. Stern, Baltimore, on account, 25 barrels flour at \$10 per barrel. Sold for cash to S. B. Alverson, New York, 50 barrels flour at \$9.50 per barrel. Received cash of W. H. Stern, on account, \$100. Bought of H. C. Franklin, Chicago, on account, at 30 days, 200 barrels of pork at \$12 per barrel. Bought of P. Armour & Co., for cash, 100 barrels of lard at \$25 per barrel. January 3, sold James Garrison, on account, 50 barrels of pork at \$15 per barrel. Sold H. D. Jones, on account, 50 barrels lard at \$27 per barrel. Bought of A. P. Barnes, on account, 200 barrels flour at \$7.50 per barrel. Sold for cash 50 barrels lard at \$26.75 per barrel. Sold W. H. Stern, on account, 100 barrels flour at \$8.25 per barrel. Received cash, H. D. Jones, on account, \$1,000. January 4, sold for cash 75 barrels flour at \$8.10 per barrel. Bought for cash 200 barrels flour at \$7.25 per barrel. Paid A. P. Barnes \$1,000 on account. Inventory—250 barrels flour at \$7.25, 150 barrels pork, \$12. (a) Given the above business transaction, open and work up a set of double-entry books. (b) Close your ledger and make out a trial balance. 2. What do you understand by: (a) gross weight? (b) a certified check? (c) a protest? (d) liabilities? (e) an assignee? 3. Collins & Carpenter bought, March 13, 1912, of Alex. Goodman, 40 barrels salt at \$1.50, 50 barrels pork at \$10.50, 50 barrels beef at \$14. Paid cash \$785, and gave a note at 30 days for the balance. They prepaid the note on March 21, 1912. Find face of note, discount, proceeds. Journalize these transactions.

Letter Writing—Weight 1.5.

Write a letter to the Civil Service Commission of Philadelphia of not more than 150 words on the following subject: Discuss the qualifications which a good bookkeeper should possess.

Mechanical arrangement, adherence to subject and expression will be considered in marking this subject. Do not sign your name to the letter. subject and expression will be considered in marking this subject. Do not sign your name to the letter.

Penmanship—Weight 1.5.

This subject will be marked on the writing in the above letter.

Spelling—Weight 1.

Write the correct form of each of the following words:

1. Campaign. 2. Privelege. 3. Legeble. 4. Tollerance. 5. League. 6. Significance. 7. Substantial. 8. Executive. 9. Gasolene. 10. Efficiency. 11. Preliminary. 12. Assignment. 13. Companion. 14. Illegal. 15. Luncheon. 16. Pursuit. 17. Liquidate. 18. Lieutenant. 19. Petition. 20. Ordinance.

CASHIER, LAW DEPARTMENT.

\$1,800 per annum, May 29, 1912.

Training and Experience—Weight 2.

(See page 215.)

Arithmetic—Weight 2.

1. Make an exact copy of this tabulation on your examination paper and then find the daily totals, the total for each class of goods and the grand total.

Days	Clothing	Dry Goods	Furnishings	Millinery	Household Utensils	Totals
Monday -----	\$730 50	\$968 40	\$126 50	\$256 85	496 80	—
Tuesday -----	640 18	890 30	90 15	420 62	841 82	—
Wednesday -----	900 70	950 40	75 60	308 80	468 30	—
Thursday -----	400 18	900 40	324 00	435 00	321 90	—
Friday -----	860 30	720 80	126 70	304 30	702 30	—
Saturday -----	840 15	900 72	215 20	450 05	335 64	—
Totals -----						

2. Find the bank discount and proceeds of a note for \$2,500, dated May 8, at three months, and discounted on June 16 at 6 per cent. 3. Which is the greater in value, and how much, $1\frac{5}{7}$ or 1.72? 4. Two men are engaged to do a piece of work. When working alone the one can do it in two days, the other in three days. In what time can both do the work when working together? 5. A property valued at \$10,000 is assessed for $\frac{3}{4}$ of its value. The owner pays annually to the City \$124.50, which amount includes the property tax and water rent, as follows: 1 hydrant at \$5, 9 spigots at 50 cents each and one waste pan at \$2.50. What is the rate in mills of the property tax? 6. The following liens are recorded against a property: \$25.75, January 5, 1907, for pavement repairs; \$32.50, June 6, 1908, for plumbing; \$26.25, July 7, 1910, for resetting curb; \$17.95, January 15, 1912, for damages. At this date what will it cost the owner of the property to remove these liens, interest at 6 per cent.?

Law—Weight 2.

1. Write out a check on the X bank, drawn by A to the order of B and endorsed by C. What are the rights and liabilities of each of these parties? 2. A check for \$200, drawn by A, is presented to you for payment of a

municipal lien on September 1, 1911, drawn on the Tradesmen's Trust Company. This check is deposited for collection on October 1, and in the meantime the Tradesmen's Trust Company has become insolvent. What are your rights against the maker of the check? 3. Name the subjects for which municipal liens may be filed in the City of Philadelphia. 4. Give the essential facts which must be stated in a municipal lien. 5. There is a property in the City of Philadelphia against which there is a first mortgage for \$1,000, a second mortgage for \$500, a claim for taxes for 1912 and a lien of \$60 for street improvements. This property is sold at sheriff's sale under foreclosure of the first mortgage. Which of the claims above stated are discharged by the sheriff's sale and which are still good?

Letter Writing—Weight 1.5.

Write a letter of not less than 150 words to the Civil Service Commission, Philadelphia, giving your views concerning the advantages of a system of small parks and playgrounds in a large city.

Mechanical arrangement, adherence to the subject and expression will be considered in marking this subject. Do not sign your name to the letter. Use your examination number instead.

Penmanship—Weight 1.5.

Make a copy of twelve lines from the body of the above letter. Penmanship mark will be on this.

Spelling—Weight 1.

1. Judgment. 2. Indemnify. 3. Subsidiary. 4. Debentures. 5. Ineligible. 6. Jeopardize. 7. Mortgages. 8. Serviceable. 9. Embezzle. 10. Covenant. 11. Hazard. 12. Expenditure. 13. Insolvency. 14. Liability. 15. Bankruptcy. 16. Amicable. 17. Authenticated. 18. Embarrassed. 19. Economical. 20. Facility.

OFFICE MANAGER AND CHIEF CLERK,
CIVIL SERVICE COMMISSION.

\$2,400 per annum, March 2, 1912.

Training and Experience—Weight 2.

(See page 215 and the following.)

1. Did you pursue modern office methods in the positions you held? If you did, specify fully what they were and what your share was in their operation.
2. In which of the positions held by you were you required to meet the public? What was the nature of your contract with it?

Clerical and Executive Ability—Weight 4.5.

1. What steps would you take to keep in touch with the administrative activities of other Civil Service Commissions and to secure the published and unpublished results of such activities? Is there a City Bureau which could aid you in this work? 2. What general system would you recommend for the disbursement of the appropriation of the Commission, the making of requisitions and the incidental bookkeeping? 3. Following is an abstract of the chief activities of the Commission for the year ending December 31, 1910, as contained in the Annual Report: Applications filed for examinations, 3,904; examinations held, 250; eligible lists published, 300; applicants passed examinations, 2,282; applicants failed to pass examinations, 521; applicants failed to attend examinations, 1,101.

APPOINTMENTS, COMPETITIVE CLASS.

	By Original Appoint- ment	By Pro- motion	By Rein- state- ment
Office of Mayor -----	—	—	—
Department of Public Safety-----	440	74	52
“ “ Public Works -----	153	27	5
“ “ Public Health and Charities-----	65	1	3
“ “ Supplies -----	—	—	—
“ “ Wharves, Docks and Ferries-----	19	—	7
“ “ Law -----	—	—	—
Civil Service Commission -----	—	—	—
	677	102	67

APPOINTMENTS IN NON-COMPETITIVE CLASS.

Office of Mayor, 1; Department Public Safety, 2; Department Public Works, 1; Department Public Health and Charities, 2; Department Wharves, Docks and Ferries, 1; Department of Law, 8. Total, 15.

APPOINTMENTS IN THE EXEMPT CLASS.

Office of Mayor, 1; Department of Public Safety, 1; Department of Public Health and Charities, 1. Total, 3.

LABOR CLASS.

Applications filed, 1,361; persons placed on register, 1,341; appointments, 543; reinstated, 123. Letters received relative to examinations, 1,500. City divided into Departments and Bureaus. Departments request certifications of eligibles. Certifications are made by Commission. Notice of appointment is received by Commission. Roster of employees is kept by Commission. Disbursements for supplies, salaries, etc., are made from appropriations. Examinations are held for all trades and professions, more than 250 in all. Eligible lists are published

and printed for distribution. Records of examinations are filed in such a manner as to admit of ready access. With the above outline in mind, give in detail what system of records you would suggest as advisable for filing and indexing correspondence of the Commission, applications, lists of eligibles, certifications, promotions, transfers and roster of employees. 4. Answer the following letter: Office Manager, Civil Service Commission, Philadelphia. Sir:—I have been removed from a position in one of the City Departments under the previous administration for reasons which I believe to be political. Please advise me how I should seek redress. Yours, John Doe. 5. What general principles would you adopt in the supervision of the employees of the Commission to secure efficiency, deal with temperamental differences and locate responsibility?

Knowledge of the Civil Service Act of March 5, 1906, (applying to Philadelphia), of the City Departments, and of the principles underlying the Merit System.—Weight 1.5.

THE CIVIL SERVICE ACT.

1. What are the principal functions of the Commission under the Act? 2. (a) Into what classes does the Act divide positions? (b) What does each class comprise? (c) What is the theory upon which each division is made? 3. Under what conditions and for what reasons may the Commission refuse to examine a person? 4. What is meant by "probationary period," as mentioned in Section 8 of the Act? What is its purpose and how does it operate? 5. What is the purpose of provisional appointments? How are they made? 6. Under what conditions may positions in the competitive class be filled without competition? 7. Into what classes must the Commission arrange the classified service and what general principles should determine the distribution of positions in each of

such classes? 8. What safeguards does the Act provide against appointments to its provisions? 9. What records of the Commission must be open to public inspection and what are the reasons for such publicity?

CITY DEPARTMENTS.

10. Mention one important duty of each of the Municipal Departments. 11. Give the routine through which an ordinance must pass before it becomes a law. 12. Is the Mayor eligible to a second term of office? What advantages or disadvantages accrue from the provisions of the law in this respect? 13. What is meant by: (a) An appropriation, and (b) the apportionment of the City funds? 14. What limitation is imposed upon officers of the City in creating a liability by the City to pay money? 15. What are the general functions of municipal government provided for in the Bullitt Bill, and where are these functions vested?

THE PRINCIPLES UNDERLYING THE MERIT SYSTEM.

16. What are the abuses which the Civil Service Act is designed to remedy? 17. What remedies does the Act provide? 18. Why should the political activity of city employees be restricted, and to what extent? 19. What are the advantages of competitive over non-competitive examinations? 20. What general results have been obtained in cities where the Merit System has been adopted?

Oral Test—Weight 2.

1. Character and disposition. 2. Personality: Address, manners, health, personal appearance. 3. General intelligence (shown in conversation), readiness (quickness, fluency), judgment, discretion (tact), resourcefulness, command of English, accuracy of information. 4. Experience and business capacity, oral language.

15 cs

CHIEF CLERK, BUREAU OF HEALTH.
DEPARTMENT OF PUBLIC HEALTH AND CHARITIES.

\$1,200 per annum, September 26, 1912.

Training and Experience—Weight 3.

(See page 215.)

Arithmetic—Weight 2.

1. The expenditures at the Municipal Hospital for the year were: Officers' salaries, \$8,760; employees' salaries, \$36,262.83; repairs, \$2,766.28; light and fuel, \$8,408.18; supplies, \$34,717.36; wagons, horses, etc., \$3,634; printing, etc., \$960.64. The total appropriation was \$103,803.78. What percentage of the total appropriation was expended and what per cent. were the expenditures for the officers' salaries of the entire amount expended? 2. Check the items in the following bill and show clearly any necessary correction and the proper net amount of the bill: 734 pounds beef at $8\frac{1}{4}$ cents, \$62.26; 728 pounds sugar at $5\frac{3}{8}$ cents, \$38.93; 975 pounds rice at 5 cents, \$46.75; 224 dozen tomatoes at \$1.15, \$257.60; 56 dozen corn at $87\frac{1}{2}$ cents, \$134.50; 980 pounds soap at $4\frac{3}{4}$ cents, \$45.75; 1,150 pounds starch at $5\frac{1}{2}$ cents, \$62.75. Total, \$646.54. Discount, 2 per cent., \$12.47. Amount, \$634.07. 3. Find the totals for "Institution Collectively" and "Total for Maintenance" in the following table.

EXPENDITURES.

	Philadelphia General Hospital			Hospital for Indigent		Institutions Collectively
	Department for Children	Insane Hospital	General Hospital	Males	Females	
Subsistence	\$3,023 92	\$108,786 79	\$100,002 83	\$36,481 23	\$20,992 80	—
Fuel and light..	639 47	28,426 12	17,940 14	10,311 17	6,330 83	—
Clothing	539 62	31,784 74	10,692 72	3,723 92	2,278 31	—
Drugs, etc.	—	2,608 73	14,083 66	619 90	411 43	—
Miscellaneous ...	784 27	27,573 66	29,164 63	4,714 78	3,306 93	—
Tobacco	—	651 71	335 83	779 14	84 02	—
Salaries	577 46	26,350 82	18,742 01	8,001 41	5,308 85	—
Wages	1,043 46	53,087 96	33,194 68	13,696 25	8,959 04	—
Total for maintenance.....						

4. Find the simple interest of \$875.90 for 4 years, 3 months and 21 days at $4\frac{1}{2}$ per cent. 5. The list prices on two bills of goods were \$2,480 and \$1,640 respectively. The discounts on the former were 20 per cent., 10 per cent. and 5 per cent., and on the latter 15 per cent., 10 per cent. and 5 per cent. What were the discounts in each case and the net amount of each bill?

Bookkeeping—Weight 2.

John B. Jamison began business August 1, 1912, with a cash capital of \$5,000. August 1, bought of William Baines & Co., 150 dozen tomatoes at \$1.05; 460 dozen corn at $87\frac{1}{2}$ cents; 400 pounds rice at 5 cents. Bought of James Stetson, 50 barrels flour at \$6.75; 120 barrels flour at \$7. August 2, sold for cash 10 barrels flour at \$7.25; 10 dozen tomatoes at \$1.20; 50 pounds rice at $6\frac{1}{4}$ cents. Sold to Samuel B. Smith 28 dozen tomatoes at \$1.18; 75 pounds rice at 6 cents; 20 barrels flour at \$7.40. August 3, bought of William Wilson & Co., 120

barrels lard at \$26. Paid on account \$400. Bought of Joseph B. Brown 10 barrels sugar (3,256 pounds), at $5\frac{1}{2}$ cents. Sold David Jackson 5 barrels lard at \$28.50; 2 barrels sugar (652 pounds), at 6 cents. Paid William Baines & Co. on account \$250. Received of Samuel B. Smith \$100 on account. August 5, sold Samuel B. Smith 30 dozen tomatoes at \$1.15; 10 dozen corn at \$1; 25 barrels flour at \$7.40. Sold David Jackson 20 barrels flour at \$7.45; 150 pounds rice at $5\frac{1}{2}$ cents; 24 dozen corn at 95 cents. Paid James Stetson on account \$500. August 6, paid William Baines & Co., on account, \$100. Sold for cash 20 dozen tomatoes at \$1.22; 10 dozen corn at 95 cents; 1 barrel lard at \$29; 50 pounds rice at 6 cents. Sold Samuel B. Smiley, on his note at 30 days, 50 barrels lard at \$28.50; 10 dozen corn at $92\frac{1}{2}$ cents. Paid cash for team hire, \$24; freight, \$16.20. Inventory.—62 dozen tomatoes at \$1.05; 316 dozen corn at $87\frac{1}{2}$ cents; 75 pounds rice at 5 cents; 70 barrels flour at \$6.75; 55 barrels flour at \$7; 64 barrels lard at \$26; 8 barrels (2,604 pounds), sugar at $5\frac{1}{2}$ cents. (a.) Make day book entries and also journalize and post the above business transactions. (b.) Close your ledger and make out a trial balance.

Penmanship—Weight .5.

Penmanship will be marked on the entire written examination of the applicant.

Spelling—Weight .5.

Write the correct form of each of the following words: 1, diphtheria; 2, fumigation; 3, measles; 4, disinfection; 5, clinically; 6, laboratory; 7, organisms; 8, formaldehyde; 9, sergical; 10, municipal; 11, ambulances; 12, crematory; 13, meningitis; 14, transmissible; 15, mortality; 16, pulmonery; 17, maledies; 18, bacteriologic; 19, tubercloses; 20, pneumonia.

Tabulation—Weight 2.

Arrange the following data in convenient tabular form, with appropriate headings, totals, summaries, etc. Disbursements, year ending December 31, 1911, Board of Public Education. Normal School, permanent improvements, \$63,096.75; coal, \$2,633.52; furniture, \$6,110.65; janitors, \$9,128.26; teachers, \$53,077.64; books, \$5,178.21; repairs, \$1,257.76; incidentals, \$6,368.78. High School for Girls, repairs, \$4,445.26; coal, \$4,514.60; janitors, \$17,000; teachers, \$179,204.73; incidentals, \$8,954.78; furniture, \$3,139.16; rents, \$4,000; books, \$11,083.56. William Penn High School, incidentals, \$6,453.59; books, \$8,257.59; teachers, \$115,074.46; janitors, \$15,666.59; rents, \$3,465.42; coal, \$4,801.53; furniture, \$8,318.86; repairs, \$10,755.56; permanent improvements, \$8,654. Central High School, permanent improvements, \$4,474; furniture, \$5,206.42; janitors, \$19,507; teachers, \$176,770.72; incidentals, \$8,087.26; books, \$8,800.27; coal, \$4,927.64; repairs, \$10,475.28. Central Manual Training High School, repairs, \$557.30; furniture, \$1,399.74; coal, \$651.34; rents, \$6,000; janitors, \$4,971.23; teachers, \$73,074.52; books, \$3,208.98; incidentals, \$5,575.97. Northeast Manual Training High School, repairs, \$703.21; teachers, \$98,579.82; books, \$3,999.92; incidentals, \$6,369.83; coal, \$4,103.52; furniture, \$1,306.80; janitors, \$12,311.56. Southern Manual Training High School, books, \$5,228.46; incidentals, \$6,199.77; teachers, \$74,367.46; janitors, \$10,516; coal, \$4,163.45; furniture, \$6,379.60; repairs, \$1,724.96; permanent improvements, \$17,449. West Philadelphia District High School, permanent improvements, \$179,250. Trades Schools, teachers, \$15,799.92; books, \$599.23; incidentals, \$1,520.47; janitors, \$2,127; coal, \$266.43; repairs, \$165.88. Elementary Schools, permanent improve-

ments, \$595,508.40; repairs, \$174,853.29; furniture, \$138,511.40; teachers, \$3,489,667.57; books, \$230, 139.59; incidentals, \$12,403.10; janitors, \$326,294.77; rents, \$18,400.63; coal, \$115,531.54.

CLERK, ANY DEPARTMENT.

Less than \$750 per annum, March 15, 1912.

Training and Experience—Weight .5.

(See page 215.)

Arithmetic—Weight 2.

1. Add 3894568, 4956987, 6548496, 37675, 285754, 3679846. 2. Multiply 689574 by 937. 3. Divide 98237312 by 647. 4. Find the sum of $7\frac{1}{2}$, $6\frac{1}{3}$, $8\frac{1}{4}$ and $9\frac{1}{8}$, and from the total subtract $6\frac{3}{4}$. 5. Find 27 per cent. of 275. 6. Compute the simple interest of \$250 for 2 years 6 months, at 6 per cent. 7. Add 746 and 8 tenths, 472 hundred-thousandths, 36 and 466 thousandths, 725 ten-thousandths.

Letter Writing—Weight 2.

Write a letter of not less than 100 words to the Civil Service Commission, Philadelphia, on the subject: The advantages to be derived from free night schools.

Mechanical arrangement, adherence to the subject, and expression will be considered in marking this subject. Do not sign your name to the letter; use your examination number instead.

Penmanship—Weight 2.

This subject will be marked on the writing in the letter.

Plain Copy—Weight 1.5.

Make an exact copy of the following: There has been no occasion during the past year to use this pump as the "Brooklyn" method of washing has proven satisfactory, but experience at our other plants shows that after using

this method of washing for from twelve to eighteen months, it is then necessary to remove and wash from six to nine inches of the upper layer of sand, and from present indications it will be necessary to follow this plan here.

Previously water has been taken from the stand pipe for washing purposes, but the pressure was not sufficient to be economical.

The cost of labor and water for washing by the "Brooklyn" method was only \$0.40 and about 1,400 gallons of wash water were used per million gallons filtered.

Comparing the filtered water and the water flowing from the preliminary filters, the reduction for the past year was as follows:

	Per cent.
Average reduction, turbidity	98.79
Average reduction, bacteria	99.37
Maximum reduction, turbidity	100.00
Maximum reduction, bacteria	99.98
Minimum reduction, turbidity	95.45
Minimum reduction, bacteria	92.31

Spelling—Weight 2.

1, Answer. 2, Authority. 3, Brilliant. 4, Career. 5, Criminal. 6, Domestic. 7, Dredge. 8, Energetic. 9, Exact. 10, Flange. 11, Gallery. 12, Guilt. 13, Honest. 14, Hospital. 15, Incomplete. 16, Leisure. 17, Memorandum. 18, Necessary. 19, Patrol. 20, Specimen.

CLERK, ANY DEPARTMENT.

\$750 to less \$1,000 per annum, March 18, 1912.

Training and Experience—Weight .5.

(See page 215.)

Arithmetic—Weight 2.

1. Add 93878968546, 58737895482, 47563754975, 65989684896, 89436854378, 74565429739. 2. Add $767\frac{1}{2}$, $6468\frac{3}{4}$, $72\frac{3}{8}$ and $876\frac{5}{16}$, and from the sum

subtract $7267\frac{1}{8}$. 3. Multiply 78659 by $67\frac{3}{8}$. 4. Divide 29708108 by 798. 5. 645 is 15 per cent. of what number? 6. Find the simple interest of \$635.65 for 2 years, 3 months, 15 days, at 6 per cent. 7. Divide 7.95135 by 3.05. 8. How much do I pay for 150,000 shipping tags, the listed price of which is $33\frac{1}{3}$ cents a thousand, if a discount of 25 per cent. and 5 per cent. are allowed? 9. If $\frac{3}{8}$ of a number is 99, what is $\frac{5}{6}$ of the same number? 10. A man receives \$2,400 a year. He spends $16\frac{2}{3}$ per cent. of it for rent, $8\frac{1}{3}$ per cent. for clothing, $33\frac{1}{3}$ per cent. for household expenses. How much does he save?

Letter Writing—Weight 2.

Write a letter of not less than 150 words to the Civil Service Commission, Philadelphia, on the subject.—“Inventors and their inventions during the last 25 years.”

Mechanical arrangement, adherence to the subject, and expression will be considered in marking this subject. Do not sign your name to this letter; use your examination number instead.

Plain Copy—Weight 1.5.

Make an accurate copy of the following: Since February 15 the filters have been operated at rates approximating 6,000,000 gallons per day per acre, the average rate since the above date being 4.2 million gallons per acre per day.

Two methods of cleaning were employed, i. e., the regular or scraping and ejecting method and the use of Nichols' Separators.

The total number of runs or cleanings was 840 during the year, an average of about 13 cleanings per filter, having an average length of 26.2 days.

The Nichols' method was used for 695 cleanings and the average cost was as follows:

Number of cleanings by Nichols' method	695
Average length of runs, days	27.3
Average million gallons, filtered, per run	41.7
Average m. g. filtered per acre per run	119.8
Average cost of water to wash per m. g. filtered	\$0 01
Average cost of labor to scrape and wash per m. g. filtered...	40
Cost of water wasted	01
Total cost per m. g. filtered	42
Average number of gallons wash water per m. g. filtered	1,000
Average depth scraped per run, inches	0.71

Penmanship—Weight 2.

This subject will be marked on the writing in the letter.

Spelling—Weight 2.

1, Anthracite. 2, Balance. 3, Budget. 4, Censure.
5, Curator. 6, Duplicate. 7, Eligible. 8, Embarrass.
9, Epidemic. 10, Explicit. 11, Fortunate. 12, Gasoline.
13, Gymnasium. 14, Humiliate. 15, Indelible. 16,
Library. 17, Militia. 18, Nominal. 19, Pecuniary. 20,
Spontaneous.

CLERK, ANY DEPARTMENT,

\$1,000 to less than \$1,250 per annum, March 19, 1912.

Training and Experience—Weight .5.

(See page 215.)

Arithmetic—Weight 2.

1. Add 289768535, 778946389, 934854276, 647693868,
492876845, 378965489, 768456787, 364567978. 2. Re-
duce the following to common fractions: .5, .25, .75, .375,
.3125 and .875. 3. Reduce the following to decimals
and then add: $\frac{1}{8}$, $\frac{3}{16}$, $\frac{4}{5}$, $\frac{3}{4}$, $\frac{1}{2}$ and $\frac{7}{10}$. 4. Multi-
ply $7854\frac{1}{2}$ by $26\frac{2}{3}$, and divide the product by 3.74.
5. What per cent. of 625 is 43.75? 6. Find the simple
interest of \$613.75 for 6 years, 5 months and 18 days
at 5 per cent. 7. The length of a rectangle is $572\frac{3}{4}$
feet, and its width is $25\frac{1}{2}$ feet. How many square yards

are there in its surface? 8. How many cubic feet of space in a room $25\frac{1}{2}$ feet long, $16\frac{2}{3}$ feet wide, and 18 feet 6 inches high? 9. What is the time in years, months and days between March 15, 1909, and February 5, 1912? 10. A case contains 818496 lead pencils. What will they cost at \$1.25 a gross?

Correcting Copy—Weight 2.

In the following: 1. Correctly spell all misspelled words. 2. Correct all errors in grammar. 3. Write in full all abbreviated words. 4. Write all numbers in words. 5. Make all necessary changes in capitalization.

During the past year the Bureaus of Highways have accomplished considerable work in as far as funds were available. 21 miles of sts were opened and were graded, and 16.02 miles of new sts were paved, together with the repaving of 10.24 miles of old sts. The most important repaving work was the repaving of market st from Delaware ave to 2d st with granite blocks and from 2d st to 16th st with creosoted wood blocks. This work was done at the solicitation of the market st merchants who desired this character of paving. It marks a new departure in paving in this City and the wisdom of adopting wood paving for heavily travelled sts are still questioned. The present is too early to judge of the durability of wood blocks and as many similar requests have been presented to your Honorable Bodies, I respectfully urge the postponement of any further extension of this character of paving until it has been conclusively demonstrated that it is worth its cost, as the average cost per sq yd for wood blocks is \$3.49 compared with \$1.49 for asphalt.

Letter Writing—Weight 2.

Write a letter of not less than 150 words to the Civil Service Commission, Philadelphia, on the following sub-

ject.—From your use of the street cars in Philadelphia, what suggestions would you make for the improvement of the means of street transportation in this city?

Mechanical arrangement, adherence to the subject, and expression will be considered in marking this subject. Do not sign your name to the letter; use your examination number instead.

Penmanship—Weight 1.5.

This subject will be marked on the writing in the letter.

Plain Copy—Weight 1.

Make an accurate copy of the following:

Philadelphia, January 3, 1910.

HON. JOHN E. REYBURN,

Mayor of Philadelphia.

DEAR SIR:

I have the honor to submit herewith the report of the operations of the Department of Public Works for the year ending December 31, 1909—the Twenty-third Annual Report.

The exhaustive reports of the Chiefs of the several Bureaus comprising this Department, which are attached hereto, will give you all the details of operations, etc.

The net amount of money available during the year was \$18,903,565, of which \$11,303,202.29 was derived from loans, and \$7,600,363.47 from direct taxation.

The expenditures during the year aggregated \$10,274,842.04, of which \$5,657,988.73 was for maintenance and current expenses, and \$4,616,853.31 for extensions and improvements.

The total receipts were \$4,703,720.91, an increase over 1908 of \$194,562.91, this increase being due to the effi-

cient methods recently established in the Bureau of Water in the work of inspecting and collecting.

Yours truly,

GEORGE R. STEARNS,
Director.

Spelling—Weight 1.

1, Anticipate. 2, Banana. 3, Bureau. 4, Ceremony. 5, Cylinder. 6, Emery. 7, Excelsior. 8, Feasible. 9, Fugitive. 10, Generate. 11, Hazard. 12, Hygiene. 13, Indefensible. 14, Linoleum. 15, Miscellaneous. 16, Nuisance. 17, Penitentiary. 18, Statue. 19, Tangent. 20, Tuesday.

CLERK, ANY DEPARTMENT.

\$1,250 to less than \$1,600, March 20, 1912.

Training and Experience—Weight .5.

(See page 215.)

Arithmetic—Weight 1.5.

1. Find the daily totals and the total for the week:

	Bushels Oats	Bushels Wheat	Bushels Rye	Bushels Corn
Monday -----	87,845	249,561	23,768	366,496
Tuesday -----	2,597	3,176	792,878	27,964
Wednesday -----	66,456	23,489	89,697	489,673
Thursday -----	874	376,345	543,989	876,849
Friday -----	3,749	792,498	59,276	54,368
Saturday -----	59,683	97,664	394,654	379,687

2. The expenditures of a city department for 1908 were \$987,650; for 1909, \$998,895; for 1910, \$869,575; and for 1911, \$1,215,650. Find: (a) The total expenditures for the entire period. (b) The average annual expenditure. (c) The approximate percentage of in-

crease or decrease each year in comparison with the previous year. (d) The percentage of each year's expenditure above or below the average annual expenditure. 3. The following sized patches were repaved at the annexed prices. A rectangular patch, 27 feet by 35 feet at \$1.75 a square yard; a rectangular patch 68 feet 6 inches by 85 feet at \$1.85 a square yard; a rectangular patch 105 feet 3 inches by 65 feet 6 inches at \$1.80 a square yard; a square patch 25 feet 4 inches long at \$1.90 a square yard; a triangular patch, base 103 feet 6 inches, vertical distance from base to highest point of triangle 18 feet, at \$2 a square yard. Find the cost of each part of the work, and the total cost. 4. Six men can do a piece of work in six days. The Director wishes the work completed in $1\frac{1}{2}$ days. How many men should be put on the work? In how many days could 15 men do it? 5. Three men form a partnership. The first contributes \$5,560 towards the capital; the second \$4,870. Each draws out \$25 a week salary, and at the end of the year the books show an undivided surplus or gain of \$1,565.75. What was: (a) The total gain for the year (b) The amount each one received during the year? (c) The gain per cent. on the investment? 6. A note for \$650.65, dated January 15, 1911, was paid August 17, 1911. What was the amount paid, interest at $4\frac{1}{2}$ per cent.? 7. The Department of Supplies received the following bill: 150 reams of bond paper at 65 cents a ream, \$97.50; 125 reams of typewriting paper at \$1.15 a ream, \$142.75; 65 reams of typewriting paper at 50 cents a ream, \$32.50; 110 quarts of ink at 18 cents a quart, \$19.80; 550 typewriter ribbons at 27 cents each, \$148.50; 1,250 gross lead pencils at 95 cents a gross, \$1,187.50; 650 gross lead pencils at \$1.25 a gross, \$812.50; 375 dozen penholders at 8 cents a dozen, \$30. Total, \$2,824.95, less discount, 2 per cent, \$56.50—\$2,768.45. Check each

item of this bill. If any error is found, correct the item and entire bill.

Correcting Copy—Weight 1.5.

In the following: 1. Correct all misspelled words. 2. Correct all errors in grammar. 3. Write in full all abbreviated words. 4. Make all necessary changes in capitalization. 5. Write all figures in words.

The dept has been considering plans for some time for the improvment of this section of the City, and as the fund become avaleable large and commodeous docks and wharfs should be planed and develloped at the S. E. and S. W. points of this district. Preliminary plans had been drawn and are set forth in the act. director's rept. These plans show a no. of piers and R. R. frt. yds, at the south-eastern and southwestern points of s. phila, giving ac-comodation at the delaware riv. terminal for 50 ships, at the mouth of the schuylkill 24 ships, at darkness point for 28 ships, and at yankee point for 29 ships, making additional accommodations to the present port facilities for 131 ships, of 600 feet in length. The R. R. facilities is good, and will be improved if business warrant it. The erection of the docks at the points mentioned would give a shiping front close to Transportation facilities and a Port from which vessels could depart at all seasons of the year, being ennabled to avoid the horse-shoe ice jam.

Letter Writing—Weight 1.5.

Write a letter of not less than 200 words to the Civil Service Commission, Philadelphia, giving your views concerning the means of preserving the public health during the last decade.

Mechanical arrangement, adherence to the subject and

expression will be considered in marking this subject. Do not sign your name; use your examination number instead.

Penmanship—Weight 1.5.

This subject will be marked on the writing in the letter.

Spelling—Weight 1.

1, Affidavit. 2, Battalion. 3, Calculate. 4, Cessation. 5, Dairy. 6, Encyclopedia. 7, Exhibit. 8, Federal. 9, Fumigate. 10, Governor. 11, Hemorrhage. 12, Immune. 13, Indispensable. 14, Malady. 15, Metropolis. 16, Official. 17, Perceive. 18, Subpoena. 19, Temperature. 20, Vacuum.

Tabulation—Weight 1.5.

Properly arrange the following data in tabular form, writing suitable heading, etc.: During the year 1907 the receipts from water rents were \$3,710,187.53; from water pipes, \$107,071.85; from City Solicitor's Office, \$39,176.74; from penalties, \$30,160.39; from delinquent rents, \$28,721.55; miscellaneous receipts, \$3,917.72; from searches, \$3,996. During 1908 the receipts were: From water pipes, \$127,955.41; from water rents, \$3,873,179.02; from penalties, \$34,999.93; from City Solicitor's Office, \$37,848.32; from delinquent rents, \$36,036.92; from searches, \$2,573.75; from miscellaneous, \$19,628.81; from delinquent penalties, \$5,267.05. In 1909: From water rents, \$4,049,443.80; from searches, \$2,523.50; from delinquent penalties, \$5,573.63; from miscellaneous, \$8,296.40; from water pipes, \$104,046.54; from penalties, \$36,015.25; from City Solicitor's Office, \$34,865.02; from delinquent rent, \$37,876.96.

Time—Weight 1.

EXTRA CLERK, ANY DEPARTMENT.
As per Ordinance January 11, 1912.
Training and Experience—Weight .5.
(See page 215.)

Arithmetic—Weight 1.

1. Add 296845, 687954, 379768, 768476, 545689. 2. Multiply 68765 by 6. 3. Divide 1728144 by 6. 4. Add $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{5}{8}$.

Copying—Weight 3.5.

Make an exact copy of the following:

Philadelphia, January 22, 1910.

MR. FRED C. DUNLAP,

Chief, Bureau of Water.

DEAR SIR: I herewith submit the Annual Report of the operations of the Bureau of Water Construction and Repair Shop, Twelfth and Reed Streets, for the year ending December 31, 1909.

Very respectfully,

JAMES H. DEAN,
Superintendent of Shop.

Labor and Merchandise.

Belmont machinery	\$4,982 90	
Belmont boilers	636 45	
Belmont filters	1,167 35	
		\$6,786 70
Frankford machinery	\$1,512 64	
Frankford boilers	1,978 04	
		3,490 68
Fairmount machinery	14 06	
		14 06
Queen Lane machinery	\$3,667 65	
Queen Lane boilers	146 09	
		3,813 74
Roxborough machinery	\$6,530 53	
Roxborough boilers	1,251 18	
Roxborough filters	354 42	
		8,136 13
		<u>\$22,241 31</u>

Penmanship—Weight 2.5.

This subject will be marked from the copying exercise.

*Speed—Weight 1.5.**Spelling—Weight 1.*

1, Chief. 2, Department. 3, Rents. 4, Bureau. 5, Assistant. 6, Inspector. 7, Filter. 8, Paymaster. 9, Foreman. 10, District. 11, Hydrant. 12, Engineer. 13, Attendant. 14, Hospital. 15, Dwelling. 16, Apartment. 17, Tenement. 18, Fountain. 19, Machine. 20, Articles.

REQUISITION CLERK (PROMOTION),
DEPARTMENT OF SUPPLIES.

\$1,500 per annum. May 29, 1912.

Arithmetic—Weight 1.

1. Add 6432789, 7644351, 842195, 3456746, 9627, 8276498, 160195, 85193. 2. Add $16\frac{5}{8}$, $4\frac{7}{16}$, $8\frac{1}{4}$, $5\frac{3}{64}$, and multiply the sum by $3\frac{4}{15}$. 3. Multiply 561.45 by 8.264, and divide the product by 4.132. 4. Find the interest and the amount of \$9,645 for 2 years 8 months and 20 days at 5 per cent. 5. Make out the following bill, supplying the dates, names and places of business of both debtor and creditor: 276 pairs of gloves at 85 cents; 880 yards flannel at $37\frac{1}{2}$ cents; 642 yards muslin at 6 cents; 18 tablecloths at \$2.75; 16 boxes of hosiery at 83 cents. 6. A City Department received an appropriation of \$32,000; requisition was made upon it for all but \$3,840. What per cent. of it remained? 7. A merchant bought $\frac{3}{8}$ of a vessel and sold $\frac{4}{5}$ of his share for \$11,700, which was 30 per cent. above the cost. What was the cost of the vessel? 8. What principal will gain \$213 at $7\frac{1}{2}$ per cent. per annum in 2 years, 4 months? 9. A farmer raised 20 per cent. more wool in 16 cs

1907 than in 1906. The amount raised in the two years was 13,200 pounds. How much was raised each year?

Exact Copy—Weight 1.

Make an exact copy of the following:

AN ORDINANCE

To authorize certain transfers in the annual appropriation to the Department of Wharves, Docks and Ferries, for the year 1910.

SECTION 1. *The Select and Common Councils of the City of Philadelphia do ordain*, That the City Controller be, and is hereby authorized to make the following transfers in the annual appropriation to the Department of Wharves, Docks and Ferries, for the year 1910, viz.: From Item 6, for dredging private docks in front of private bulkheads in the Delaware and Schuylkill Rivers where City sewers empty, five thousand (5,000) dollars; from Item 13 (loan), to operate and maintain dredging plant during the year 1910, thirty thousand (30,000) dollars; from Item 20 (loan), for the improvement of the Delaware and Schuylkill River fronts and channels, one hundred thousand (100,000) dollars; total, one hundred and thirty-five thousand (135,000) dollars. To the following: To Item 6 (new), for dredging City docks, private docks into which municipal sewers empty, the Schuylkill River channel, and shoals in the Delaware River, between the pierhead and bulkhead lines, thirty-five thousand (35,000) dollars; to Item 21, for the construction of a bulkhead along the easterly side of Delaware Avenue, and from the south side of Vine Street to a distance of fifty-six (56) feet, more or less, north of the line of Callowhill Street, one hundred thousand (100,000) dollars.

Approved the sixteenth day of June, A. D. 1910.

JOHN E. REYBURN,
Mayor of Philadelphia.

Letter Writing—Weight 1.

Write a letter of about 150 words to the Civil Service Commission, Philadelphia, on the subject: "Every large city should have a purchasing department similar to the Department of Supplies of the City of Philadelphia."

Mechanical arrangement, adherence to the subject, and expression will be considered in marking this subject. Do not sign your name to the letter; use your examination number instead.

Penmanship—Weight .5.

This subject will be marked on the writing in the letter.

Practical Questions—Weight 6.

(a) Write a letter in answer to the following fictitious request:

"Director of Supplies: Please send me a dozen lead pencils and scratch pads. We need them in a hurry.

Yours truly,

CHIEF CLERK,

Bureau of Water."

(Form, clearness, knowledge of all regulations involved by such a request, and general tone will be considered in grading this letter.) (b) If a requisition from a City Board exceeds the available appropriation by \$150, what action should be taken? Be very definite. (c) Correct the following bill and write out a letter to be sent with it to the consignor in explanation of the changes you desire him to make:

DIRECTOR OF SUPPLIES,

City of Philadelphia.

To JOHN DOE, DR.

1912.

May 4	20 dozen black lead pencils, at 44c.	\$8 60
	48 chairs for typewriters, at \$2	96 00
9	5 Fay-Sholes machines, at \$75	375 00
20	60 gallons black ink, at \$1.98	137 80

Delivered as follows:

Chief Clerk, Elevator Inspection Bureau	3 pints
Chief Clerk, Water Bureau	30 pints
Civil Service Commission	10 pints
City Controller	25 quarts
Receiver of Taxes	25 pints
Laboratory of Hygiene	2 pints
Board of Surveyors	3 pints
Board of Fire Escapes	2 pints
House of Correction	30 pints
City Morgue	1 pint
Chief Clerk, Bureau of Gas	20 quarts
May 22 10,000 envelopes, at \$2.20	\$22 00
Board of Public Education.	

Terms, 3 per cent. ten days. Otherwise net.

(d) Write out a clear statement of the daily duties of a requisition clerk, so that from your report a new clerk will understand exactly what is expected of him. (Clearness, thoroughness and order will be considered in grading this report.) (e) Tabulate the following appropriations and expenditures from them under the various Departments, Bureaus and Boards. Then make out a report to the Director of Supplies showing what unexpended balances remain under each item:—Appropriations: Item 29. For the purchase of blankets for Philadelphia General Hospital, Philadelphia Hospital for Insane, five thousand (5,000) dollars. Item 4. To the Board of Philadelphia Museums, for coal, three thousand (3,000) dollars. Item 40. (Fire.) For tools for repair shop, three hundred (300) dollars. Item 6. For groceries, meats, butter, eggs, milk, vegetables and ice at Philadelphia Hospital for Contagious Diseases, forty-five thousand (45,000) dollars. Item 2. For printing and binding the Mayor's Annual Message and accompanying documents, five thousand (5,000) dollars. Item 4. (Health.) For vaccine virus and antitoxin and other biological products, three thousand (3,000) dollars. Item 30. For boilers and cauldrons for House of Correction, three hundred (300)

dollars. Item 63. For supplies to City Morgue, five hundred (500) dollars. Item 32. (Water.) For donkey pumps, machine tools and condensers, five hundred (500) dollars. Item 11. For office supplies for District Surveyors, five thousand four hundred (5,400) dollars. Item 8. For oil, coal and engineers' stores for bridges, one thousand (1,000) dollars. Item 22. For automobile hire for Real Estate Assessors, six hundred (600) dollars. Item 35. For instruments, etc., for Police Surgeon, two hundred (200) dollars. Expenditures: Automobile hire, Real Estate Assessors, \$572.; one donkey pump, Torresdale Filter Works, \$245; embalming supplies, City Morgue, \$500; one boiler, House of Correction, \$203; meat, Philadelphia Hospital for Contagious Diseases, \$2,204.96; 10 new stations, police telephones, \$102; 100 tubes vaccine virus (Health), \$24; 50 barrels of flour, Philadelphia Hospital for Contagious Diseases, \$243.02; 200 tons of coal, Philadelphia Museums, \$459.24; 12 dozen blankets, Philadelphia Hospital for Insane, \$275.94; 10 gallons oil for Gray's Ferry Bridge, \$9.53; 50,000 envelopes, District Surveyor, \$143; one scales, Police Surgeon, \$47.50; 5,000 gallons milk, Philadelphia Hospital for Contagious Diseases, \$243. (f) What items under (d) and (e) could be purchased without advertising for bids?

Spelling—Weight .5.

1, Settlement. 2, Apportionment. 3, Delinquent. 4, Separation. 5, Community. 6, Preliminary. 7, Accumulate. 8, Disappointed. 9, Accommodation. 10, Stationery. 11, Expenditure. 12, Arrangement. 13, Commissioners. 14, Concentration. 15, Libraries. 16, Assessors. 17, Exemption. 18, Supplemental. 19, Hydraulic. 20, Budget.

CUSTODIAN, DEPARTMENT OF LAW.

\$1,000 per annum, June 5, 1912.

Experience—Weight 1.

(See page 215.)

Arithmetic—Weight 1.

1. (a) Arrange in column form the following numbers in accordance with their numerical values, the highest at the top. (b) Find the sum of these numbers: 1146.0123, 846.00243, 1143.187, 1143.0942, 4.1326, .08176, .2874, .98326, 9.08635, 9.04635, 71., 70.045, 70.5, 71.45, 70.04.
2. Reduce the following decimal fractions to common fractions equal in value: $.33 \frac{1}{3}$, $.12\frac{1}{2}$, $.016$, $.125$.
3. Find the difference between 259.00702 and 156.07.
4. Change the following common fractions to decimal fractions of equal value: $\frac{1}{4}$, $\frac{1}{6}$, $\frac{1}{10}$, $\frac{3}{5}$.
5. Find the sum of $2\frac{1}{8}$, $\frac{1}{3}$, $3\frac{1}{2}$, $3\frac{4}{5}$, $11\frac{1}{9}$.
6. Divide 78421906.8 by 807.06.
7. A laborer buys $\frac{3}{5}$ of a cord of wood worth \$6.50 a cord, and pays for it in work at 80 cents per day. How many days must he work to make full payment?

Letter Writing—Weight 1.

Write a letter of not less than 150 words to the Civil Service Commission, Philadelphia, giving your views on the value of a summer vacation to persons engaged in office work or business.

Mechanical arrangement, adherence to the subject and expression will be considered in marking this subject. Do not sign your name to the letter; use your examination number instead.

Office Methods—Weight 4.

1. What are the advantages derived from a perfected system of filing? 2. Explain the vertical system of filing letters and documents. 3. Assume the receipt of a com-

munication signed by John Jones, and referring to four different subjects. How would you file this communication, and what records would you make of it so that it might be called for under the head of the signer or any one of the four subjects treated 4. Describe in detail the equipment needed for filing and keeping a record of documents and papers. 5. What do you understand by (a) A chronological scheme of filing. (b) An alphabetical scheme of filing. (c) A departmental scheme of filing. Could these be combined into one system? 6. Arrange the following names in alphabetical order such as would be found in a dictionary or directory:

John Syren	C. R. Spear	W. Sullivan
A. H. Stirk	W. A. Syren	A. W. Spare
M. Streeter	Wm. Swint	R. Strawbridge
B. E. Spence	A. H. Tweeter	J. J. Swoyer
A. B. Sykes	W. R. Sutch	R. O. Spencer
Swift & Co.	H. J. Snyder	A. E. Sweigert
H. E. Snyder	C. J. Streeper	

Penmanship—Weight 2.

Make a copy of any twelve lines from the body of the above letter. Penmanship will be marked on this.

Spelling—Weight 1.

1, Knowledge. 2, Sensible. 3, Syndicate. 4, Maturity. 5, Recompense. 6, Reputable. 7, Guardian. 8, Vindicate. 9, Tenement. 10, Assignment. 11, Lucrative. 12, Negotiate. 13, Executor. 14, Influential. 15, Remittance. 16, Option. 17, Separate. 18, Wednesday. 19, Proprietor. 20, Persevere.

NOTICE SERVER,
DEPARTMENT WHARVES, DOCKS AND FERRIES.

\$900 per annum, June 7, 1912.

Personal Fitness—Weight 1.5.

Arithmetic—Weight .5.

1. The population of ten cities is as follows: 275,685, 97,543, 68,762, 927,689, 54,698, 375,424, 68,456, 83,769, 68,592 and 125,675. What is their total population? 2. The average value of 25 properties is \$2,597. What is their total value? 3. In 275 days a writ server has served 5,225 subpoenas. What was the average number a day? 4. Subtract $\frac{7}{8}$ from the sum of $\frac{1}{4}$, $\frac{1}{3}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{6}$. 5. A writ server serves 75 out of 90 writs. What percentage remained unserved?

Penmanship—Weight 1.

This subject will be marked on the writing in the Plain Copy.

Plain Copy—Weight 1.

Make an exact copy of the following: In Commonwealth vs. Henry Quigg, an appeal was taken from the decree of the Court of Quarter Sessions of this County on March 13, 1910, to the Superior Court, as of October Term, 1910, No. 56. In this case an order had been made upon the defendant, Henry Quigg, by the Court of Quarter Sessions of this County on June 21, 1905, directing the defendant to pay the sum of one dollar per week to the City of Philadelphia, to reimburse it for the amount it was paying for the support of his wife, Mary Quigg, who was an inmate of the State Hospital for the Insane at Norristown, and there supported as a charge on the City of Philadelphia.

Practical Questions—Weight 5.

1. (a) Suppose you are given a notice to serve on the owner of adjoining property in case of application for

license to build a wharf. How would you serve the notice? (b) How would you serve the notice if you found the owner to be a married woman? (c) How would you serve the notice if you found the owner to be a corporation?

2. How would you serve a notice given to you after 12 o'clock noon on Saturday if the person to be served expected to leave the city on Sunday for a journey to Europe?

3. Suppose on going to the residence or business office of the person to be served you failed to find him in, and the only person in charge of his place was a boy of fifteen. What would you do?

4. Suppose, in attempting to serve a man with a notice, he or some one at his direction should attempt to assault you. What would you do?

5. If a person on whom you were attempting to serve a notice refused to admit you into his house, would you have the right to force an entrance to serve him?

6. If you have a notice to serve on the master of the tugboat, "Reading," and find that he is on a voyage to Boston and will not return for a week, what would you do?

7. If you have a notice to serve on the owner of a steamer, "Olympic," and find that the owner is the White Steamer Company, a corporation with an office in the Land Title Building, how would you serve that notice?

8. If John Smith, the owner of land adjoining that upon which a pier is to be built, lives in New York City, how would notice of the application for a license to construct the pier be served upon him?

9. Suppose you are given a notice to serve upon the owner of a vessel and find that the owner is John Jones, who lives in Norfolk, Va., but that Peter Brown, at Front and Dock streets, Philadelphia, is his general agent. How would you serve that notice?

10. What facts would you state in making your report of service?

Spelling—Weight 1.

1, Plaintiff. 2, Answer. 3, Defendant. 4, Complainant. 5, Respondent. 6, Attorney. 7, Solicitor. 8, Authority. 9, Appearance. 10, Prothonotary. 11, Personally. 12, Residence. 13, Business. 14, Pier. 15, Affidavit. 16, Refusal. 17, Libellant. 18, Wharves. 19, Bulkheads. 20, Qualifications.

OFFICE BOY, ANY DEPARTMENT.

\$25-40 per month, October 9, 1912.

Experience—Weight 1.

(See page 215.)

Arithmetic—Weight 1.5.

Add 387, 456, 395, 487, 562, 687. 2. Add $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$, $\frac{7}{8}$. 3. Add 24.37, 5.906, 12.21, 187.599 and subtract 27.47 from the sum. 4. If a merchant buys calico at $5\frac{7}{8}$ cents a yard and sells it at 6 cents a yard, how much will he gain on $167\frac{5}{8}$ yards? 5. A room is 30 feet long, 18 feet wide. What will be the cost of oil-cloth at 85 cents a square yard, to cover it? 6. Divide 347,692 by 351.

Letter Writing—Weight 1.5.

The following advertisement appeared in the morning paper: Wanted—Boy for office work; neat, punctual, good at figures. Answer in own handwriting. Thomas Waters, 199 North Twelfth street.

Write a letter applying for the above position. Tell what qualifications you possess, but do not sign your name to the letter.

Penmanship—Weight 1.

This subject will be marked on the writing in the above letter.

Personal Fitness—Weight 4.

1. What is your age? 2. To what extent do you use liquor and cigarettes? 3. Have you ever been arrested?
4. Cleanliness. 5. Physical fitness.

Spelling—Weight 1.

Write the correct form of each of the following words:
 1, beleave; 2, childern; 3, removeing; 4, nessesary; 5, heighth; 6, linnen; 7, genneral; 8, Wenesday; 9, cheif;
 10, notise; 11, comander; 12, machinary; 13, telagraph;
 14, captian; 15, polliceman; 16, department; 17, operator;
 18, surveyor; 19, mesenger; 20, officer.

PAYMASTER,

DEPARTMENT PUBLIC WORKS, BUREAU OF HIGHWAYS.

\$1,200 per annum, September 26, 1912.

Experience—Weight 2.

(See page 215.)

Arithmetic—Weight 1.5.

1. Add 739,587, 28,375, 449,836, 536,478, 38,596, 27,839, 648,365, 53,287. 2. The amount of a certain month's pay roll was \$2,758.94. The following month there was an increase of 8 per cent. What was the amount paid the second month? 3. Laborers are paid \$2.50 a day, and, in a certain month, men worked as follows: Twelve men worked 14 days, 18 men 17 days, 21 men 24 days, 27 men 21 days, 19 men 27 days, 35 men 26 days, 18 men 19 days. What was the total amount of wages paid out that month? 4. An office had the following employes with attached salaries: Chief, \$2,500 per annum; 1 clerk, \$1,500 per annum; 3 clerks (each) \$1,000 per annum; 1 messenger, \$900 per annum; 2 inspectors (each) \$1,350 per annum; 8 inspectors (each) \$900 per annum. The pay-roll, as made out for July, totaled

\$1,928.66. Work out the individual salaries and the total amount for the month of July. If the pay-roll amount stated is incorrect, find the extent of the error. 5. Find the simple interest of \$635.65 for 2 years, 3 months, 15 days at 6 per cent. 6. How much will 12,000 shipping tags cost, the list price of which is 33 $\frac{1}{3}$ cents a thousand, if a trade discount of 25 per cent. and 5 per cent. is allowed? 7. In January $3\frac{1}{2}$ tons of coal were bought for \$19 $\frac{1}{4}$; in February $27\frac{7}{8}$ tons for \$15 $\frac{3}{8}$, and in March 5 $\frac{7}{12}$ tons for \$30 $\frac{7}{10}$. How much coal was bought in all? Find the total cost and the average price per ton.

Office System—Weight 1.

1. Outline a system of office records that would enable you to keep in permanent form all information in regard to the number of men employed, their names and addresses, the title under which each is employed, the jobs on which he has been employed, the time on each, and the wages he receives. 2. Explain the vertical system of filing letters. 3. Explain two methods of obtaining and filing duplicate copies of all communications sent from an office. Where the communication is an answer to or is answered by another, state clearly how the fact is brought out in your records. 4. A communication has been received from John Diamond referring to three different subjects. It is likely to be called for at any time under the head of the writer's name or any one of the three subjects treated. How would you file this communication and what records would you make of it?

Penmanship—Weight 1.

Penmanship will be marked on the entire written examination of the applicant.

Practical Questions—Weight 4.

1.

	Monday Hours	Tuesday Hours	Wednesday Hours	Thursday Hours	Friday Hours	Saturday Hours	Total	Day rate	Amount
John M. Davis.....	5½	10	7	9	5½	9	—	\$2 50	—
Charles Dickson	10	9½	10	7½	8	8½	—	2 75	—
Martin Bayles	12	8	9½	7½	8½	9	—	2 25	—
William Stokes	11	10½	7	9½	7	9½	—	1 75	—
John F. Lynch	8½	11	9½	10	9½	11	—	2 50	—
Samuel Jackson	9	10½	9	8	10	11	—	2 75	—
William Mason	9½	11	8½	11	10½	7	—	2 25	—
James A. Moss	10	11	10½	8	9	7	—	2 75	—

Make a copy of the above pay-roll. Assuming an eight-hour day, make the calculations necessary to fill in totals and amount. Overtime is to be allowed time and half time. If any additional columns are needed, indicate them. The envelope system of payment is to be used. How much would the paymaster need to pay the men and how much money of each denomination would he need to have? State clearly all the details of your work.

2. Samuel Smith, annual salary \$1,000, began September 18; William Burns, annual salary \$1,600, began September 6; Thomas Welsh, annual salary, \$1,250, began October 4; James Wilson, annual salary \$1,100, began October 7. What is the monthly salary of each of the above? How much should each receive at the end of the month indicated? If an employees' retirement fund were to be established at the rate of 1 per cent. for salaries of \$1,200 or less and 1½ per cent. for salaries of more than \$1,200, what amount would have to be deducted from each one of the above? 3. The following time card shows the time of reporting and leaving of the workmen indicated, together with the rate per hour.

	A.M.		P.M.		Rate	Amount
	In	Out	In	Out		
John Jones -----	7.50	11.30	12.20	5.30	20c	—
William Wilson -----	7.45	11.30	12.45	5.45	22c	—
James Bodd -----	7.55	12.20	12.50	6.15	23c	—
Joseph Bush -----	8.30	12.15	1.30	6.10	25c	—

Calculate and place in proper column the amount due each one. Show all work. 4. Where workmen are employed part of a day on one piece of work and part on another, what system of time records could be used so that the labor cost on each piece of work could be obtained.

Spelling—Weight .5.

Write the correct form of each of the following words:

1, municiple; 2, judgement; 3, beneficial; 4, dissappoint; 5, mantained; 6, sanitary; 7, responsable; 8, superintendant; 9, goverment; 10, suficient; 11, supervision; 12, recieving; 13, conspicuus; 14, beleive; 15, heighth; 16, mechanicle; 17, prejudicial; 18, genneraly; 19, incumberance; 20, organisation.

STATISTICIAN

DEPARTMENT OF PUBLIC WORKS

\$.35 to \$.65 per hour, September 27, 1912.

Experience—Weight 3.

(See page 215.)

Arithmetic—Weight 2.

Neatness, arrangement, time, as well as accuracy, will be considered in marking this paper.

1. The estimates of the needs of five departments of a city were: Police and Fire, \$97,565; Education, \$120,000; Health, \$78,950; Surveys, \$500,900; Highways, \$420,-

750. If the total amount available is \$1,000,000 and each department estimate is reduced in the same proportion, what amount will each receive? 2. Capital stock of railway company is \$2,150,000; bonded debt at $4\frac{1}{2}$ per cent. is \$661,000; expense of operation is \$170,697; other expenses are \$8,691. How many passengers would have to be carried at 5-cent fare so that a dividend of 6 per cent. might be paid? 3. (a) Arrange in column form the following numbers in accordance with their numerical values, the highest at top. (b) Find the sum of these numbers: 28,967.048, 1,256.0054, 8.7562, 1009.483, 28.9547, 56,965.27, 11,547.251, 974.862, .00567, 75.864, 195.651, 275.824, 1.596, 232.005, 10.095. 4. The following pieces of street repair work were done at the prices indicated: A rectangular piece, 58 ft. x 73 ft. at \$1.65 per sq. yd.; a rectangular piece, 72 ft. 6 in. x 97 ft., at \$1.75 per sq. yd.; a triangular piece, base 112 ft. 6. in., altitude 21 ft., at \$1.90 sq. yd.; a piece in form of trapezoid, 27 ft. upper base, 95 ft. lower base, altitude 15 ft., at \$2 per sq. yd.; a square piece, 40 ft. 8 in. long at \$1.80 per sq. yd. Find the cost of each part of the work, the total cost, and the average cost per square yard.

Compilation—Weight 4.

Neatness, arrangement, and time, as well as accuracy, will be considered in marking this paper.

1. A railroad with a terminal T and five stations, A, B, C, D, and E, located respectively 1.8, 4.0, 6.1, 7.4, and 9.3 miles from T, had the following passenger figures: Carried from A to T, 4,865; B to T, 2,487; B to A, 967; C to T, 4,867; C to A, 648; C to B, 975; D to T, 1,247; D to A, 967; D to B, 1,046 D to C, 998; E to T, 4,706; E to A, 2,465; E to B, 1,248; E to C, 975; E to D, 1,115. What was the percentage of passengers leaving each station to the whole number of passengers carried? What was

the average distance carried of all passengers taken to the terminal T? Arrange all the above data and percentages in tabular form. 2. According to the census records the population of five cities in the United States has varied as follows:

Cities	1860	1870	1880	1890	1900	1910
A-----	50,005	54,227	62,906	62,900	52,880	40,975
B-----	10,405	10,500	9,675	11,464	27,400	35,907
C-----	12,900	13,800	14,700	15,600	16,500	17,400
D-----	15,000	16,500	19,500	25,500	37,500	61,500
E-----	42,600	31,900	34,000	32,000	40,000	54,900

By the use of co-ordinates plot the curves, showing variation in population and indicate clearly any comparative facts brought out. 3. You have been assigned to get data in regard to the manufacturing conditions in a certain town where there are five general lines of activity as follows: Brick manufacturing, steel and iron products, textiles, etc., furniture and woodwork, electrical machinery. Data is to be obtained for the years 1904, 1905, 1906, 1907 and 1908, and is to include value of manufactures in each group, number of men employed, average daily wages, percentage of increase or decrease in each of these for 1906 over 1904 and for 1908 over 1906. Use the following data for brick manufacturing: 1904, value of manufactures, \$282,560; men employed, 252; average wages, \$2.12; 1905, value of manufactures, \$310,675; men employed, 270; average wages, \$2.15; 1906, value of manufactures, \$365,006; men employed, 305; average wages, \$2.18; 1907, value of manufactures, \$212,480; men employed, 225; average wages, \$2.06; 1908, value of manufactures, \$245,640; men employed, 258; average wages, \$2.10. Work out the required percentages from the above data. Assume data for other four lines of manufacturing activity. Per-

centages for these are not to be worked out. Show how you would tabulate all the data called for and indicate clearly and systematically all the work that it was necessary for you to do.

Penmanship—Weight .5.

Penmanship will be marked on the entire written examination of the applicant.

Spelling—Weight .5.

Write the correct form of each of the following words:

1, compitition; 2, enormus; 3, estemate; 4, ornamental; 5, propposal; 6, labratory; 7, accurasy; 8, release; 9, mantain; 10, materiel; 11, contractor; 12, seperation; 13, sufficient; 14, exceded; 15, receaved; 16, concreet; 17, avenue; 18, population; 19, expence; 20, propperty.

ASSISTANT STATISTICIAN,
DEPARTMENT OF PUBLIC WORKS.

\$.35 to \$.65 per hour, September 27, 1912.

Experience—Weight 2.

(See page 215.)

Arithmetic—Weight 3.

Neatness, arrangement and time, as well as accuracy, will be considered in marking this paper.

1. The estimates of the needs of five departments of a city were: Police and Fire, \$97,565; Education, \$120,000; Health, \$78,950; Surveys, \$500,900; Highways, \$420,750. If the total amount available is \$1,000,000 and each department estimate is reduced in the same proportion what amount will each receive? 2. Capital stock of railway company is \$2,150,000; bonded debt at $4\frac{1}{2}$ per cent. is \$661,000; expense of operation, \$170,697; other expenses, \$8,691. How many passengers would have to be

carried at 5-cent fare so that a dividend of 6 per cent. might be paid? 3. (a) Arrange in column form the following numbers in accordance with their numerical values, the highest at the top. (b) Find the sum of these numbers: 28,867.048, 1,256.0054, 8.7562, 1,009.483, 28.9547, 56,965.27, 11,547.251, 974.862, .00567, 75.864, 195.651, 275.824, 1.596, 232.005, 10.095. 4. The following pieces of street repair work were done at the prices indicated: A rectangular piece, 58 ft. x 73 ft., at \$1.65 per sq. yd.; a rectangular piece, 72 ft. 6 in. x 97 ft., at \$1.75 sq. yd.; a triangular piece, base 112 ft. 6 in., altitude 21 ft., at \$1.90 sq. yd.; a piece in form of trapezoid, 27 ft. upper base, 95 ft. lower base, altitude 15 ft., at \$2 per sq. yd.; a square piece, 40 ft. 8 in. long, at \$1.80 per sq. yd. Find the cost of each part of the work, the total cost, and average cost per square yard.

Tabulation—Weight 3.

Neatness, arrangement and time, as well as accuracy, will be considered in marking this paper.

1. A railroad with a terminal T and five stations, A, B, C, D and E, located respectively 1.8, 4.0, 6.1, 7.4, and 9.3 miles from T, had the following passenger figures: Carried from A to T, 4,865; B to T, 2,487; B to A, 967; C to T, 4,867; C to A, 648; C to B, 975; D to T, 1,247; D to A, 967; D to B, 1,046 D to C, 998; E to T, 4,706; E to A, 2,465; E to B, 1,248; E to C, 975; E to D, 1,115. What was the percentage of passengers leaving each station to the whole number of passengers carried? What was the average distance carried of all passengers taken to the terminal T? Arrange all the above data and the percentages in tabular form. 2. According to the census records the population of five cities in the United States has varied as follows:

Cities	1860	1870	1880	1890	1900	1910
A-----	50,665	54,227	62,996	62,900	52,800	40,975
B-----	10,465	10,500	9,675	11,464	27,460	35,997
C-----	12,900	13,900	14,700	15,600	16,500	17,400
D-----	15,000	16,500	19,500	25,500	37,500	61,500
E-----	42,000	51,900	54,000	52,000	40,000	54,000

By the use of co-ordinates plot the curves, showing variation in population and indicate clearly any comparative facts brought out. 3. You have been assigned to get data in regard to the manufacturing conditions in a certain town where there are five general lines of activity as follows: Brick manufacturing, steel and iron products, textiles, etc., furniture and woodwork, electrical machinery. Data is to be obtained for the years 1904, 1905, 1906, 1907 and 1908, and is to include value of manufactures in each group, number of men employed, average daily wages, percentage of increase or decrease in each of these for 1906 over 1904, and for 1908 over 1906. Use the following data for brick manufacturing: 1904, value of manufactures, \$282,560; men employed, 252; average wages, \$2.12; 1905, value of manufactures, \$310,675; men employed, 270; average wages, \$2.15; 1906, value of manufactures, \$365,006; men employed, 305; average wages, \$2.18; 1907, value of manufactures, \$212,480; men employed, 225; average wages, \$2.06; 1908, value of manufactures, \$245,640; men employed, 258; average wages, \$2.10. Work out the required percentages from the above data. Assume data for other four lines of manufacturing activity. Percentages for these are not to be worked out. Show how you would tabulate all the data called for and indicate clearly and systematically all the work that it was necessary for you to do.

Penmanship—Weight 1.

Penmanship will be marked on the entire written examination of the applicant.

Spelling—Weight 1.

Write the correct form of each of the following words:
 1, compitition; 2, enornus; 3, estemate; 4, ornamental;
 5, propposal; 6, labratory; 7, accurasy; 8, release; 9,
 mantain; 10, materiel; 11, contractor; 12, seperation; 13,
 sufficient; 14, exceded; 15, receaved; 16, concreet; 17,
 avenue; 18, population; 19, expence; 20, propperty.

STENOGRAPHER AND CLERK,
 DEPARTMENT OF PUBLIC HEALTH AND CHARITIES.
 \$600 per annum, March 21, 1912.

STENOGRAPHER AND TYPEWRITER,
 ANY DEPARTMENT.
 Less than \$750 per annum, March 21, 1912.

Experience—Weight .5.
 (See page 215.)

Arithmetic—Weight 1.

1. Add: 378,547, 29,456, 487,698; 976,865, 195,979,
 79,686, 43,798. 2. Subtract: $789\frac{5}{8}$ from the sum of
 $2,859\frac{1}{4}$ and $364\frac{1}{2}$. 3. Multiply: 28.546 by $78\frac{1}{4}$. 4.
 Divide: 417,024 by 768. 5. Find 36 per cent. of 750. 6.
 Find the simple interest of \$627.50 for 6 years 4 months
 at 6 per cent. 7. A man spends $\frac{1}{8}$ of his income for rent,
 $\frac{1}{4}$ for household expenses, $\frac{1}{16}$ for clothes and $\frac{1}{2}$ for
 other expenses, and saves \$150. What was his income?

Copying and Spacing—Weight 1.

Make an exact copy of the following:

STATEMENT OF RECEIPTS AND EXPENDITURES FOR THE
YEARS 1907 AND 1908.

	Receipts 1907	Receipts 1908
Receipts for water rent	\$3,710,187 53	\$3,878,179 02
Receipts from fractional rent	92,649 45	95,556 23
Receipts from water pipes	107,071 85	127,955 41
Receipts from City Solicitor's office	39,176 74	37,848 32
Receipts from penalties	30,160 39	34,999 98
Receipts from delinquent rent	23,721 55	35,083 92
Receipts, miscellaneous	3,917 72	19,023 21
Receipts from searches	3,908 00	2,573 75
Receipts from delinquent penalties	4,983 13	5,267 05
Totals	\$4,020,819 36	\$4,233,045 49

Dictation—Weight 3.

LETTER.—Dear Sir: I would call your attention to the fact that the three hundred new lamps which the United Gas Improvement Company is required to erect annually under the terms of the lease of the Philadelphia Gas Works, is totally insufficient to light the newly laid out streets upon which operative builders are erecting houses. During the past year this condition became so tense that arrangements had to be made with the United Gas Improvement Company to erect the three hundred lamps for 1909, practically one year in advance of what said company was required. This partly helped the Bureau out of its embarrassment, but it was not until Councils had passed a resolution authorizing the Director of the Department of Public Works to locate gasoline lamps in the outlying sections of the City where he may deem necessary, in streets where gas mains have been laid, that the diffi-

culty was overcome. Under this resolution, five hundred and sixty-six gasoline lamps were erected. Yours truly.

To be dictated at the rate of 80 words a minute. Time, 2 minutes.

ARTICLE.—Satisfactory progress has been made in the matter of providing drainage facilities for the southern section of the City, but much work remains to be done; as, in the near future, that portion of the City composed mostly of lowlands lying south of Oregon avenue and between the Delaware and Schuylkill rivers, is bound to expand, particularly in view of the construction of the Southern Boulevard on the line of Broad street, and the intention of this administration to improve the river embankments in the southern section of the City. In order to keep pace with these improvements, sewers must be started at the rivers. These are costly operations and liberal appropriations should be provided for several years before they can be completed and be of practical benefit in the development of the territory. The improvement of the harbor facilities has been a subject of constant study not only by the engineers of the Department, but by the committees of citizens interested in the subject, who have worked in co-operation with the City officials with a view of bringing about a perfect understanding between the transportation companies and the City. The results of their meetings will be made public in the special message to be transmitted to your honorable bodies when it has been fully passed upon by all interested. It is a subject of considerable magnitude, and affecting the very life of the City.

Eighty words a minute. Three minutes.

Letter Writing—Weight 1.5.

Write a letter of about 150 words to the Civil Service Commission, Philadelphia, on the subject: "The value of free libraries in large cities."

Mechanical arrangement, adherence to the subject, and expression will be considered in marking this subject. Do not sign your name to this letter; use your examination number instead.

Penmanship—Weight 1.

This subject will be marked on the writing in the letter.

Plain Copy—Weight 1.

Make an exact copy of the following:

Attention is directed to the absolute necessity for the complete rehabilitation of the fire alarm plant in this City, plans and specifications for which have been drawn. It is absolutely essential to have the most modern and efficient apparatus. The amount of money expended for maintenance covering repairs, etc., in connection with the overhead police and fire alarm service, if spent upon the installation of underground service, would, in a short time, pay the expenses of underground installation.

Every fire house should be connected upon a direct line with the Electrical Bureau. Arrangements should be made immediately for the installation of new cables to complete such connection. The complete rewiring of the City Hall is recommended; the antiquated wiring which was placed in the Hall in 1890 requires such constant repairing that it is essential to have a new system installed in order to procure proper service and secure immunity from accident. \$50,000 should be appropriated at once to commence this work and thus forestall serious trouble that is now likely to occur.

Spelling—Weight 1.

1, agency; 2, bicycle; 3, calendar; 4, channel; 5, debtor; 6, endeavor; 7, explicit; 8, finance; 9, galley; 10, gravity; 11, horror; 12, important; 13, inferior; 14, manufacturer; 15, military; 16, operator; 17, perpendicular; 18, superficial; 19, territory; 20, vegetable

STENOGRAPHER AND TYPEWRITER (MEN ONLY),
ANY DEPARTMENT.

Less than \$750 per annum, July 15, 1912.

Arithmetic—Weight 2.

1. Add: 33,715,586, 648,271, 797,647, 38,421, 236, 795, 34,868, 873,623, 367,189.
2. Find the total cost of 240 pounds of tea at $33 \frac{1}{3}$ cents, 260 pounds coffee at $12\frac{1}{2}$ cents, 2,400 dozen eggs at $16 \frac{2}{3}$ cents, 480 pounds lard at $8 \frac{1}{3}$ cents, 360 pounds raisins at $18\frac{1}{2}$ cents.
3. What is the cost of 6,460 pounds of coal at \$6.25 per ton?
4. What is the cost of 80 quarts of syrup at 42 cents per gallon?
5. A man bought a house for \$12,864.75. He spent $33 \frac{1}{3}$ per cent. of this amount in improvements and sold it for \$20,000. Did he gain or lose, and how much?
6. A dealer offers cloth at \$3.50 per yard, subject to a 20 per cent discount. How many yards can be bought for \$56?

Dictation and Transcription—Weight 3.

(80 words a minute.)

Having adopted these principles as essential to an equitable plan of retirement, the practical question presents itself of what annuity may be thought reasonable for a person who has given his entire working life—from the age of twenty to seventy years—to the government service. It seemed to one that such a person should be retired on at least "three-quarters pay," or seventy-five per cent. of his salary. If this is a reasonable assumption, a convenient basis for computing annuities for periods of service longer or shorter than fifty years may be established by dividing seventy-five per cent. by 50 years of service. This gives one and five-tenths per cent. for each year of service as the basis for computing annuities for all other periods of service. For example, the annuity for forty years of service—that is, for a person entering the service at the age

of thirty and retiring at the age of seventy—would be determined by multiplying forty by one and five-tenths, which would give us sixty per cent. of salary. For a person entering the service at age forty, and having thirty years to serve before reaching the retirement age, the annuity would be computed by multiplying thirty by one and five-tenths, which would give us forty-five per cent. of salary. And so on down so that a person entering the service at sixty years of age, and having ten years to serve, would provide an annuity for himself equal to one and five tenths per cent. of his pay for each of his ten years of service, or fifteen per cent. This provision has the advantage of giving the largest annuity in proportion to salary to the employee serving the largest period.

The second practical question is to determine what per cent. of salaries at various ages of entrance into the service would have to be set aside by each individual in order to provide himself with an annuity equal to one and five-tenths per cent. of his salary for each year of service. To illustrate: If a person enters the service at the age of twenty years and retires at seventy years of age, he will have been in the service fifty years. To make the illustration simple, let us assume that he received a salary of one thousand two hundred dollars per annum straight through. One and one-half per cent. of this annual salary is eighteen dollars. By multiplying this amount, eighteen dollars by fifty, his number of years of service, we have nine hundred dollars, or the amount of annuity we wish to provide for on arrival of the employee at the age of retirement.

Letter Writing—Weight 1.5.

Write a letter properly dated, addressed, etc., of about 150 words, to the Civil Service Commission, Philadelphia, on the subject: "The Benefits of Outdoor Exercise."

Mechanical arrangement, adherence to the subject, and expression will be considered in marking this paper. Do not sign your name to this letter.

Penmanship—Weight 1.

This subject will be marked on the writing in this letter.

Plain Copy—Weight 1.5.

1. Make an exact copy of the following:

June 16, 1910.

BUREAU OF MUNICIPAL RESEARCH,
Philadelphia.

GENTLEMEN:—I am in receipt of your favor enclosing codification of Acts of Assembly and Ordinances of Councils governing health matters of this City, together with original copy that I furnished you for indexing.

I see that the amount of work put upon this by your Bureau has been far in excess of anything I thought of when I spoke about it last winter. I am indeed under many obligations, as it will increase the efficiency of the Department and save me, personally, a great deal of time. I shall give it careful study, and use it for daily work for a period of a month or two, in order to ascertain matters not covered, if any, after which I shall forward it to you later in the summer for revision. We will then endeavor to have it published in book form, as I believe it will be of value to the health officers in other cities, and also to many private associations here.

Thanking you again, I am,

Very respectfully yours,

J. S. NEFF,

Director.

2. Make an exact copy of the following, being careful to observe the same spacing:

In the District of Columbia			Elsewhere		
Number of employees	Estimated average salary	Total amount paid	Number of employees	Estimated average salary	Total amount paid
5,648	\$533	\$3,007,719	38,449	\$633	\$24,491,718
2,083	720	1,498,700	11,017	720	7,932,240
491	840	412,780	8,438	840	7,087,920
1,742	900	1,567,800	8,849	900	7,964,100
2,131	1,000	2,131,000	20,780	1,000	20,780,000
5,104	1,200	6,124,800	8,190	1,200	9,828,000
2,471	1,400	3,459,300	5,136	1,400	7,200,400
1,194	1,600	1,910,400	1,150	1,600	1,840,000
1,020	1,800	1,836,000	1,025	1,800	1,845,000
767	2,000	1,534,000	984	2,000	1,968,000
538	2,500	1,345,000	890	2,500	2,225,000
23,184	\$1,071 68	\$24,798,319	104,064	\$850.13	\$89,223,178

Total number of employees.....123,098

Total amount paid.....\$114,025,497 00

Estimated average salary.....\$900 14

Spelling—Weight 1.

Write the correct form of each of the following words:

1, fractional; 2, superintendant; 3, subsequent; 4, adulterate; 5, proportion; 6, demoralize; 7, preferential; 8, continuel; 9, institution; 10, preperation; 11, recepticle; 12, sanatory; 13, plaintiff; 14, premium; 15, willful; 16, tempereture; 17, certifcate; 18, effective; 19, managable; 20, foreclosure.

STENOGRAPHER AND TYPEWRITER (MEN),
ANY DEPARTMENT.

Less than \$750 per annum, December 3, 1912.

Arithmetic—Weight 1.

1. In 1910 the values of real and personal property and the tax levy in the several boroughs of New York City were as follows:

Borough	Assessed valuation real estate	Assessed valuation personal	Tax levied
Manhattan -----	\$4,745,916,785	\$298,080,483	\$68,632,591
Bronx -----	496,757,919	7,716,550	8,315,639
Brooklyn -----	1,404,080,621	59,332,025	26,560,009
Queens -----	334,568,900	5,358,480	6,155,232
Richmond -----	67,917,439	2,207,457	1,314,869
Total.....			

Find the totals and the tax rate, per hundred dollars, of each borough. 2. Find the total cost of 72 pounds at 16 $\frac{2}{3}$ cents; 48 pounds at 6 $\frac{1}{4}$ cents; 32 pounds at 12 $\frac{1}{2}$ cents; 56 pounds at 37 $\frac{1}{2}$ cents; less 12 $\frac{1}{2}$ per cent. 3. I bought a quantity of cloth for \$180. By selling it at \$2 per yard I gained $\frac{1}{3}$ of the cost. How many yards were there? 4. A park is 80 rods long and 56 rods wide. Around it is a brick walk 8 feet wide. The exposed surface of each brick is 4 inches x 8 inches. Find the cost of the brick at \$7.50 per 1,000.

Copying—Weight 2.

Make an exact copy of both of the following extracts, being careful to observe the same spacing. Put each on a separate sheet:

I.

As long as wind and water were used only in exceptional cases, and while even coal was imperfectly ex-

ploited, we were, like the primitive peoples, satisfied with the gifts yielded voluntarily by the sun and without any special effort.

- To-day electricity is more and more subjecting to our service the forces of nature—the wind and the waves; coal and water; gas and oils; the treasures at our disposal find a better and more rational utilization, which creates a surplus energy, that is, of national wealth. But the more the applications of electricity are generalized, the more will open fires disappear from the household, the studio and the factory. Fires will continue to flame only in the great generating stations.

It is certain that this tendency will bring us closer to the model we find in nature, which needs no flame for the production of light, heat and power; the rays of the sun are the one inexhaustible force. In examining more closely physical phenomena, we see that a rational and perfect utilization of time, matter and power, is the fundamental law and ultimate secret of nature, and that if the final goal of civilization consists of imitating as nearly as possible the mechanism of nature, electricity has done more in a few years to attain this goal than all the anterior centuries.

Wherever electricity has set in operation we achieve an increase of security and of yields, with a less expenditure of matter, a replacement of muscular fibre by mechanical motor force—in other words, an increasing spiritualization of labor.

-II.

APPENDIX C.

TABLES PREPARED BY HERBERT D. BROWN, SHOWING
SALARY DEDUCTIONS UNDER GILLETT OR
GOULDEN BILLS.

TABLE I.—Showing per cent. required to be deducted monthly from any salary to provide an annuity for a male

at age of 70 equal to $1\frac{1}{2}$ per cent. of annual salary for each year of service. Illustrations: \$1,200 (salary) $\times$ $1\frac{1}{2}$ (per cent.) = \$10 $\times$ 50 (years of service) = \$900 (amount of annuity).

(a) Age of retirement. (b) Age of entrance to service. (c) Years of service. (d) Amount of annuity to be provided for on retirement of age shown in column (a). (e) Cost of \$100 annuity, for a male, at age shown in column (a), first payment in one year after retirement. Interest at $3\frac{1}{2}$ per cent. per annum, compounded annually. (f) Cost of annuity shown in column (b). (g) Amount to which a deposit of \$1 per month, first payment immediate, will accumulate at 4 per cent. per annum, compound interest, at end of years shown in column (c). (h) Amount of monthly deduction required from monthly salary of \$100 (per cent. of other salaries), during years shown in column (c), to accumulate sum shown in column (f). Interest at 4 per cent. per annum, compounded annually.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
70	20	50	\$900 00	\$742 00	\$6,678 00	\$1,871 48	\$8.508
70	25	45	810 00	742 00	6,010 20	1,488 64	4.051
70	30	40	720 00	742 00	5,342 40	1,164 87	4.586
70	35	35	630 00	742 00	4,674 60	902 87	5.177
70	40	30	540 00	742 00	4,006 80	687 52	5.828
70	45	25	450 00	742 00	3,339 00	510 52	6.540
70	50	20	360 00	742 00	2,671 20	365 04	7.317
70	55	15	270 00	742 00	2,003 40	245 40	8.162
70	60	10	180 00	742 00	1,335 60	147 18	9.075

Dictation and Transcription—Weight 4.

Honesty is the first virtue that the cities must cultivate in the campaign for better living conditions. They must be honest with themselves—which they have not been—and

cease to pretend that all things are well with them. Then must come the inevitable creation of city departments of public welfare, in which Kansas City has made an excellent beginning, and then, most important of all, the campaign for quick, cheap transportation from the business centers to the outlying districts.

This is the most necessary part of the program, and upon it rests the solution of the problem. In Belgium, where the proper sort of workers' transportation obtains, the greatest distance at which the city worker conveniently may live from his work is forty miles. In this country ten miles is close to the limit. The radius must be increased to twenty or thirty miles before the cities can be said to have tried to create better living conditions, and after this constant regulation and control must be the price of success.

The opportunity to do all this now lies before our municipalities. Their duty is obvious. They are on test with all eyes upon them.

Where and how are the people going to live?

The manner in which this question is answered will determine the real value of the present awakening of the cities.

Letter Writing—Weight 1.

Write a letter of about 150 words to Peter Bolger, Secretary, Civil Service Commission, Philadelphia, on the subject: "Recent improvements that tend to increase the pleasure or decrease the cost of living in Philadelphia." Sign the letter "John Doe." In grading this letter the following points will be considered: Form, grammar, style and ideas.

Penmanship—Weight 1.

In grading this subject all the writing in the applicant's examination papers will be considered.

Spelling—Weight 1.

Write the correct form of each of the following words:

1, embarrassment; 2, chauffeur; 3, atheletic; 4, enfranchisement; 5, seperation; 6, chandulers; 7, ventilation; 8, sistom; 9, aparatis; 10, coresspondance; 11, phamplet; 12, resusetate; 13, quadrelataral; 14, preventable; 15, wheelright; 16, nessessary; 17, mutilate; 18, beutefil; 19, centenyal; 20, mechanism.

STENOGRAPHER AND TYPEWRITER (MEN AND WOMEN)
ANY DEPARTMENT.

\$750 to less than \$1,000 per annum, March 22, 1912.

Experience—Weight .5.

(See page 215.)

Arithmetic—Weight 1.

1. Add: 7,896,549, 2,957,967, 389,498, 6,768,785, 5,436,159, 4,759,876, 5,968,798, 8,479,865. 2. Multiply: 6.285 by $26 \frac{4}{5}$. 3. Divide: 9,876,849 by 78. 4. Add: $62\frac{1}{8}$, 956.4, $84\frac{3}{4}$, 24.562 and $38 \frac{5}{6}$. 5. What per cent. of 560 is 336? 6. Find the simple interest of \$625.45 for 3 years 4 months 15 days at 6 per cent. 7. A can copy an article on the typewriter in $16\frac{1}{2}$ minutes, B can do it in $\frac{3}{4}$ of that time. How long will it take him? 8. One hundred articles cost $87\frac{1}{2}$ cents. How much is that a dozen? 9. Seven-eighths of a number is 56. What is the number? 10. The product of two numbers is $125 \frac{4}{5}$. One number is $5 \frac{1}{5}$. What is the other?

Copying and Spacing—Weight 1.

Make an exact copy of the following:

The following statement is a classification of the street pavements laid during the year, and their mileage; also the total mileage of street pavements to December 31, 1908:

Kinds of pavement	Laid during 1908		Making total in City December 31, 1908	
	Sq. yards	Miles	Sq. yards	Miles
Sheet asphalt -----	706,965	40.18	6,796,878	431.05
Asphalt block -----	—	—	178,238	19.
Granite block -----	94,550	5.09	6,461,552	388.23
Cobble or rubble -----	—	—	851,074	34.
Vitrified brick -----	123,524	8.54	2,500,967	159.44
Granolithic -----	—	—	72,726	12.77
Slag block -----	—	—	71,280	9.82
Macadam -----	98,068	5.71	3,070,872	220.39
Total-----	1,018,132	59.47	19,506,477	1,343.75

Dictation—Weight 3.

LETTER.

DEAR SIR:—Work under the contract for repairs to paved streets was performed in an efficient manner to the extent of our limited appropriation. It would seem that the policy of reducing the appropriations for this class of work is poor economy. The Department has insistently called the attention of Councils to the absolute necessity for making liberal appropriations for this kind of work. Good business methods would indicate that were we able to make repairs to breaks in street paving in their incipiency, much money would be saved the City not only by avoiding damage suits for accidents but in the amount of work that had to be performed.

During the year just closed, work under the contracts for repairs to sewers was performed in a very creditable manner, not a single complaint of inattention or poor workmanship having been received during the entire year. The same conditions prevailed in the work of repairing bridges.

In a great many cities both in this country and abroad
18 cs

considerable money is collected through licenses issued by the Bureau of Highways, and the money so collected is expended in the improvement and repair of streets and roads. These licenses are issued for various classes of vehicles, using the public highways; the license fee varying as the vehicle in question may be either heavy or light or intended for commercial or pleasure uses. A graduated tax on all vehicles, strictly enforced, would produce a revenue that would be sufficient to keep the highways in first-class repair.

Yours truly.

(Dictated at the rate of 100 words a minute. Time, 2 minutes 40 seconds.)

ARTICLE.

Plans for the Queen Lane Filters which, when completed, will enable the Department to supply those high levels of the City not included in the filtered water districts, have been prepared, and it is our intention to advertise for proposals for this work at an early date. The construction of a filter plant in this location has many points in its favor, as its height will permit the supplying of any portion of the City except Manayunk and Germantown and will not necessitate the purchase of any additional ground or pumping machinery or the laying of new mains. Economy would dictate that the plant should be constructed on the site laid out by the Bureau of Water, in preference to any other location.

While a plant at this location would not fully supply the Torresdale district, its situation would be such that it would be of inestimable help in case of a temporary shortage or in the event of an extensive break-down of the Torresdale system, and would preclude the possibility of an absolute water famine or the recourse of using raw water.

Not only will the revenue collected become constantly greater, due to the increased consumption and the improved present methods employed in the collection of accounts, but under the present management a mark has been set for all future managements, and further savings will be made in the cost of operation, as have been made during the year 1909.

(Dictated at the rate of 100 words a minute. Time, $2\frac{1}{2}$ minutes.)

Letter Writing—Weight 1.5.

Write a letter of about 150 words to the Civil Service Commission, Philadelphia, on the subject: "Modern facilities and appliances of convenience in a business office." Mechanical arrangement, adherence to the subject, and expression will be considered in marking this subject. Do not sign your name to the letter; use your examination number instead.

Penmanship—Weight 1.

This subject will be marked on the writing in the letter.

Plain Copy—Weight 1.

Make an exact copy of the following:

There was expended by the Bureau of Water during 1909 the sum of \$2,827,199.63, of which \$1,604,340.27 was for current expenses and \$1,222,859.36 for improvements and extensions.

The receipts of the Bureau were \$4,440,574.19, an increase over 1908 of \$207,528.70. This gratifying increase is due almost entirely to the modern business methods adopted by the Bureau in its system of collecting water rents, etc. The receipts of the Bureau of Water equal 21.6 per cent. of the collections for City taxes and nearly 16 per cent. of the total revenue of the City.

The consumption of water during 1909 was 111,696,-

176,909 gallons, a decrease as compared with 1908 of 6,171,922,931 gallons. The average daily consumption was 306,016,923 gallons, and a per capita consumption of 197.2 gallons per day, a decrease of 13.04 gallons per capita per diem.

On May 1, 1909, we were able, for the first time, to furnish all sections of the City with filtered water. As the weather grew warmer, with the increased demand for water, it was impossible to maintain sufficient pressure on the mains from Lardner's Point Station to supply the high levels of the Queen Lane District, and, much though we regretted it, it became necessary on June 4, 1909, to supply these high levels with raw water by resuming operations at the Queen Lane Pumping Station.

Spelling—Weight 1.

1, agriculture; 2, biography; 3, camera; 4, character; 5, delinquent; 6, enumerate; 7, facilitate; 8, fraternal; 9, fugitive; 10, summary; 11, sheriff; 12, radical; 13, precision; 14, ordinance; 15, microscope; 16, immigrant; 17, honorary; 18, executor; 19, diagram; 20, column.

STENOGRAPHER AND TYPEWRITER (MEN ONLY),
ANY DEPARTMENT.

\$750 to less than \$1,000 per annum, July 16, 1912.

Experience—Weight 1.

(See page 215.)

Arithmetic—Weight 1.

1. Arrange the following according to descending values and find the sum: 11.78, 5.06, 11.07, 62.25, 11.175, .674, 5.06, 7.063, .0371. 2. J. Ross, of New York, bought of A. Covert & Co., Philadelphia, the following: 15 Nichol's Geography at \$.65, 12 Smyth's American Literature at \$.80, 25 Bowser's Geometry at \$.75, 15 Larned's History

at \$1.12, 10 Milne's Algebra at \$1; Ross paid \$25 in cash and returned books to the amount of \$10. Make out a bill showing the entire statement. 3. Reduce the following to decimals: $\frac{7}{8}$, $\frac{5}{6}$, $\frac{3}{4}$, $\frac{4}{5}$, $\frac{2}{7}$. 4. Find quotients: .288 divided by .64, 1.225 divided by 4.9, .12 divided by 30. 5. Four loads of coal weigh respectively 3,896 pounds, 3,425 pounds, 4,106 pounds and 3,123 pounds. What is the cost of the coal at \$4.82 per ton? 6. A piano listed at \$750 is sold less $33\frac{1}{3}$ per cent., 20 per cent. and 10 per cent. What is the net cost to the purchaser? 7. A dealer having bought 240 dozen eggs at \$.25 per dozen, sold $8\frac{1}{3}$ per cent of them at cost and the remainder at \$.27 per dozen. What is his profit?

Dictation and Transcription—Weight 3.

(An average of 70 is required.)

In bringing about compliance with the sanitary and the repair orders, there is an army of carpenters, painters, plasterers and plumbers clamoring to assist, but to correct the prevalent disregard of regulations and ordinances, referring to ashes and garbage, there is need of co-operation with the Street Cleaning Bureau. Could the two items of "ash and garbage receptacles provided" and "licenses displayed" be eliminated, the total orders still pending would be reduced 6,406, or almost twenty per cent.

COMPLAINTS.

Complaints received from Medical Inspectors	362
Complaints received from Nuisance Inspectors	36
Complaints received from House Drainage Division	1
Complaints received from Building Bureau	15
Complaints received from Tenement Division	22
Complaints received from Housing Commission and other social societies	69
Complaints received from anonymous sources	325
Total complaints received	832
Complaints received without cause	247

Complaints referred to Building Bureau or Nuisance Division	36
Complaints acted upon and for which applications for licenses are on file	469
Complaints pending	85
Total number of complaints received with cause	585

Two hundred and forty-seven complaints, when inspected, were found to be without cause; that is, the houses were not then tenements or unsanitary conditions had been removed. The initial inspection of the eighty complaints still pending has been made, and all are tenements upon which further inspection and addition are necessary unless the character of the house is changed, as is threatened in a few cases.

Letter Writing—Weight 1.5.

Write a letter, properly dated, addressed, etc., of about 150 words, to the Civil Service Commission, Philadelphia, on the subject: "The proper observance of Independence Day." Mechanical arrangement, adherence to the subject, and expression will be considered in marking this subject. Do not sign your name to this letter.

Penmanship—Weight 1.

This subject will be marked on the writing in the letter.

Plain Copy—Weight 1.5.

I.

Make an exact copy of the following:

Section 295.13. In all contracts which may hereafter be made with the City of Philadelphia, or any department thereof, for the furnishing of supplies or materials, the contractor shall have the option either of giving such security for the faithful performance of said contract as is now required by the ordinance entitled "An ordinance relative to municipal contracts," approved the fifth day of July, 1870 (O.254), or of making deposit of a sum of

money equal to twenty-five (25) per centum, of the total amount of his contract, which sum of money so deposited shall be accepted in lieu of the security required by the ordinance above referred to. In case of a contract the amount of which is uncertain the head of the Department to which the said supplies are to be furnished, shall approximate as nearly as may be the total amount of said contract, which approximate total amount shall be taken and considered the total amount of said contract for the purposes of this ordinance and twenty-five (25) per centum of such approximate amount may be deposited. In lieu of money the contractor may deposit and assign City, State, or United States loans of a market value, equal to twenty-five (25) per centum of the total amount of his contract, the interest thereon to be paid to him until he shall make default in any of the terms or conditions of his contract.—5 Apr., 1884, §1, O.55.

II.

Make an exact copy of the following, being careful to observe the same spacing:

WATER RENT BUREAU.

Water rents	\$4,396,123 89	
Water search fees	2,536 75	
Water, miscellaneous	7,061 78	
		\$4,405,722 42
Highways, Surveys and miscellaneous Bureaus.....		622,945 36
Department of Supplies		16,165 83
Department of Wharves, Docks and Ferries		54,300 52
Total receipts		\$27,561,882 16

REPORT OF THE OPERATIONS FOR THE YEAR 1909.

Amount of City tax on duplicates with additions by	
Board of Revision of Taxes	\$20,028,886 36
Less allowances by Board of Revision of Taxes....	53,981 54
Net	\$19,974,904 82

Net amount of City taxes collected, January 10 to December 31, 1909, deducting discount and adding penalty	\$18,851,440 91
Amount of City tax registered as delinquent.....	\$1,123,465 91
State tax assessed for the year 1909, including additions and deducting allowances by the Board of Revision of Taxes	\$2,067,992 42
Amount collected January 10 to De- cember 31, 1909, including penalty.	2,061,321 10
Amount of State tax registered as delinquent ...	6,671 32
Total amount of delinquent taxes	\$1,130,135 23

Spelling—Weight 1.

Write the correct form of each of the following words:

1, profesional; 2, asessment; 3, infringment; 4, re-
dempson; 5, forfeiture; 6, eroneous; 7, maintenance; 8,
separation; 9, subscription; 10, diameter; 11, bactereia;
12, neglegence; 13, misdemeaner; 14, affadavit; 15, es-
sential; 16, apparatis; 17, absess; 18, eccentricity; 19,
incandesent; 20, perspective.

STENOGRAPHER AND TYPEWRITER (MEN), ANY DEPARTMENT.

\$750 to less than \$1,000 per annum, December 3, 1912

Arithmetic—Weight 1.

1. In 1910 the value of real and personal property
and the tax levy in the several boroughs of New York
City were as follows:

Borough	Assessed valuation real estate	Assessed valuation personal	Tax levy
Manhattan -----	\$4,743,916,785	\$298,080,488	\$88,632,391
Bronx -----	498,757,919	7,716,550	8,815,420
Brooklyn -----	1,404,086,521	59,332,625	26,560,000
Queens -----	834,568,960	5,858,480	6,155,282
Richmond -----	67,917,439	2,207,487	1,314,850
Total.....			

Find the totals and the tax rate, per hundred dollars, of each borough.

2. Find the total cost of 72 pounds at 16 $\frac{2}{3}$ cents; 48 pounds at 6 $\frac{1}{4}$ cents; 32 pounds at 12 $\frac{1}{2}$ cents; 56 pounds at 37 $\frac{1}{2}$ cents. Less 12 $\frac{1}{2}$ per cent. 3. I bought a quantity of cloth for \$180. By selling at \$2 per yard I gained $\frac{1}{3}$ of the cost. How many yards were there? 4. A park is 80 rods long and 56 rods wide. Around it is a brick walk 8 feet wide, the exposed surface of each brick is 4 by 8 inches. Find the cost of the brick at \$7.50 per 1,000. 5. Find the total amount of bank discount and proceeds of \$120 for 33 days at 6 per cent.; \$1,320 for 48 days at 4 $\frac{1}{2}$ per cent; \$6,000 for 120 days at 4.4 per cent.; \$2,400 for 90 days at 5.4 per cent. 6. An agent sells \$8,000 worth of hardware on a commission of 2 $\frac{1}{2}$ per cent. He pays freight charges, \$162.50; drayage, \$68.50, and charges 2 $\frac{1}{2}$ per cent. for guaranteeing payment. What are the net proceeds of the sales?

Copying—Weight 2.

Make an exact copy of both the following extracts, being careful to observe the same spacing. Put each on a separate sheet.

I.

As long as wind and water were used only in exceptional cases and while coal was even imperfectly exploited,

we were, like the primitive people, satisfied with the gifts yielded voluntarily by the sun and without any special effort.

To-day, electricity is more and more and more subjecting to our service the forces of nature—the wind and the waves; coal and water; gas and oils; the treasures at our disposal find a better and more rational utilization, which creates a surplus energy, that is, of national wealth. But the more the applications of electricity are generalized, the more will open fires disappear from the household, the studio and the factory. Fires will continue to flame only in the great generating stations.

It is certain that this tendency will bring us closer to the model we find in nature, which needs no flame for the production of light, heat and power; the rays of the sun are the one inexhaustible force. In examining more closely physical phenomena, we see that a rational and perfect utilization of time, matter and power, is the fundamental and ultimate secret of nature, and that if the final goal of civilization consists of imitating as nearly as possible the mechanism of nature, electricity has done more in a few years to attain this goal than all the anterior centuries.

Wherever electricity has set in operation we achieve an increase of security and of yields, with a less expenditure of matter, a replacement of muscular fibre by mechanical motor force—in other words, an increasing spiritualization of labor.

II.

APPENDIX C.

TABLES PREPARED BY HERBERT D. BROWN, SHOWING
SALARY DEDUCTIONS UNDER GILLETT OR
GOULDEN BILLS.

TABLE I.—Showing per cent. required to be deducted monthly from any salary to provide an annuity for a

male at age of 70 equal to $1\frac{1}{2}$ per cent. of annual salary for each year of service. Illustrations: \$1,200 (salary) $\times 1\frac{1}{2}$ (per cent.) = \$18 $\times 50$ (years of service) = \$900 (amount of annuity).

(a) Age of retirement. (b) Age of entrance to service. (c) Years of service. (d) Amount of annuity to be provided for on retirement of age shown in column (a). (e) Cost of \$100 annuity, for a male, at age shown in column (a), first payment in one year after retirement. Interest at $3\frac{1}{2}$ per cent. per annum, compounded annually. (f) Cost of annuity shown in column (b). (g) Amount to which a deposit of \$1 per month, first payment immediate, will accumulate at 4 per cent. per annum, compound interest, at the end of years shown in column (c). (h) Amount of monthly deduction required from monthly salary of \$100 (per cent. of other salaries), during years shown in column (c), to accumulate sum shown in column (f). Interest at 4 per cent. per annum, compounded annually.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
70	20	50	\$900 00	\$742 00	\$6,673 00	\$1,871 48	\$3,568
70	25	45	810 00	742 00	6,010 20	1,483 64	4,061
70	30	40	720 00	742 00	5,342 40	1,164 87	4,586
70	35	35	630 00	742 00	4,674 60	902 87	5,177
70	40	30	540 00	742 00	4,006 80	687 52	5,828
70	45	25	450 00	742 00	3,339 00	519 52	6,540
70	50	20	360 00	742 00	2,671 20	385 04	7,317
70	55	15	270 00	742 00	2,008 40	245 46	8,162
70	60	10	180 00	742 00	1,336 80	147 18	9,075

Dictation and Transcription—Weight 4.

I know of no story that so well suggests and presents in concrete form the forces that are reshaping the communities and commonwealths of the South as that of

Hartsville, S. C. Originally a plantation, it was in 1890 a country hamlet of 300 inhabitants, and in nineteen hundred and ten a progressive modern town of two thousand five hundred. There is nothing sensational about its growth—no sudden boom of real estate values, no discovery of hidden treasure that has made many a more famous city prosperous—but a normal, steady growth, due at first to the practical sagacity and initiative of a few individuals, and more recently quickened by the scientific methods to agriculture and industry. The old farm, still in the hands of its original owner and always managed with good sense, has become in recent years an experiment farm, on which important discoveries have been made with regard to cotton, corn and other farm products. At the same time a number of diversified industries have been established, co-ordinated with one another, and vitally related to the products of the surrounding country. The marked success of a few and the high general average of prosperity among all the citizens have been accompanied by a public spirit that has made possible almost ideal conditions of living—strictly enforced laws of sanitation, superior educational advantages, and high moral and religious ideas. Other towns have grown up at the expense of the country around them, but Hartville is the center of a prosperous farming community, to whose prosperity and welfare her citizens have made important contributions.

Letter Writing—Weight 1.

Write a letter of about 150 words to Peter Bolger, Secretary, Civil Service Commission, Philadelphia, on the subject: "Recent improvements that tend to increase the pleasure or decrease the cost of living in Philadelphia." Sign the letter "John Doe." In grading this letter the following points will be considered: Form, grammar, style and ideas.

Penmanship—Weight 1.

In grading this subject all the writing in the applicant's examination papers will be considered.

Spelling—Weight 1.

Write the correct form of each of the following words:

1, embarrassment; 2, chauffeur; 3, atheletic; 4, enfranchisement; 5, seperation; 6, chandulers; 7, ventilation; 8, sistom; 9, aparatis; 10, coresspondance; 11, phamplet; 12, resusetate; 13, quadrelataral; 14, preventable; 15, wheelright; 16, necessery; 17, mutilate; 18, beutefil; 19, centenyal; 20, mechanism.

**STENOGRAPHER AND TYPEWRITER (MEN AND WOMEN),
ANY DEPARTMENT.**

\$1,000 to less than \$1,250 per annum, March 25, 1912.

Experience—Weight .5.

(See page 215.)

Arithmetic—Weight 1.

1. Add 682,968,768, 96,547,897, 573,896,976, 65,432,439, 487,689,685, 54,597,864, 293,846,979, 78,454,786.
2. Reduce the decimal 68.625 to a common fraction and multiply by $29 \frac{4}{5}$.
3. Reduce the fractional part of $62\frac{7}{8}$ to a decimal and then multiply the whole by $62\frac{7}{8}$.
4. Divide the sum of 785.4, 387.65, 29.48, 6.276 and 5.625 by .05.
5. 500 is $66 \frac{2}{3}$ per cent. of what number?
6. Find the simple interest of \$1,500 for 93 days at 4 per cent.
7. A bill for supplies amounting to \$375.25 was subject to a trade discount of 10, 5 and 5 per cent. What was the net amount?
8. At \$6.25 a cord, what is the value of a pile of wood 50 yards long, 12 feet wide, and $51\frac{1}{2}$ feet high (a cord = 128 cubic feet)?
9. A house and lot cost \$7,854.25. The house cost \$5,267.75 more than the lot. What was the cost of each?
10. The

following are the items of a bill: $16 \frac{2}{3}$ at \$5.75; $14\frac{7}{8}$ at 85 cents; $17\frac{5}{8}$ at \$1.12 $\frac{1}{2}$; $61\frac{1}{2}$ at \$4.50; 25 at \$6.37 $\frac{1}{2}$; $75 \frac{1}{5}$ at \$5.75; $16 \frac{2}{3}$ at \$4.75. What is the cost of each item and the total amount of the bill?

Copying and Spacing—Weight 1.

Make an exact copy of the following, and properly arrange and insert the heading suggested within the marks of parenthesis: (Statement of the operations of the Registry Division of the Bureau of Surveys during the years 1907 and 1908.)

	1907	1908
Number of certificates of registered owners issued.....	5,010	4,508
Number issued for use of Law Department.....	463	290
Receipts from certificates of registered owners.....	\$1,251 25	\$1,130 50
Receipts from miscellaneous sources.....	\$278 10	\$252 50
Number of original lots plotted.....	11,530	9,780
Number of transfers registered.....	47,569	37,611
Number of plans made for use of City Departments, Bureaus, etc	702	908
Number of examinations of registry plan books made by the public.....	71,056	72,425
Number of descriptions of property filed for registry.....	70,346	47,671
Number of titles perfected.....	2,715	2,496
Number of certificates of legal opening of streets issued to Bureaus, etc.	2,778	2,655
Number of certificates of registered owners in municipal lien cases for Law Department.....	686	880
Number of certificates of registered owners in municipal lien cases for Receiver of Taxes.....	343	685

Dictation and Transcription—Weight 3.

(An average of 70 required.)

Dictated at the rate of 120 words a minute.

LETTER.

Dear Sir: The proper environment for a child is its home. In the home the child is to receive nurture, education and protection. In its all-important work the

home is aided by the church, the school, and the playground. The home now has a further aid in the juvenile court, which deals with children who commit crime or otherwise violate the regulations of the community. This court is necessary in order that such children may not be thrown with the adult criminal, and yet may be kept from disturbing the peace of society, may be corrected, and may be trained to good citizenship. The principle of the juvenile court is an aid to, not a substitute for, the home. The growth of cities, improved methods of transportation, the spread of popular education and the desire for higher material standards of living have all contributed to the difficulty of bringing up children. It has been the experience of the juvenile court that a large per cent. of the children charged with serious offenses were delinquent by reason of unfit parents and unsuitable homes, often homes where the father dissipated their earnings instead of meeting the family obligations. The home life was found to be lacking in the examples of sobriety, industry and kindness, that would train the children in those habits of obedience which are necessary preparation for submission to the laws of the country in mature life.

ARTICLE.

The consolidation of the Bureau of Highways and Street Cleaning has, undoubtedly, been of great benefit to the City, and a careful perusal of the report of the Assistant Chief of the Bureau indicates the close supervision that has been given the work of cleaning streets, removal of ashes, garbage, etc.

If the recommendations made by the Assistant Chief in his report could be carried out, the unsightly conditions which our streets sometimes present would be avoided. The co-operation of the Department of Public Safety and the householders must first be secured, before these recommendations can be realized.

It is to be regretted that the appropriation for the removal of snow only permits the work to be done in a very limited area in the center of the City. Funds should be provided to enable us to remove snow from all streets where traffic is heavy and much local business is done. This applies particularly to highways running diagonally. There has been considerable criticism of the condition of the streets, but it is only just to the Department of Public Works and the Bureau of Highways to say that the condition exists because of the lack of appropriations with which to maintain the streets. Under the terms of the agreement with the Philadelphia Rapid Transit Company, \$500,000 per year is contributed by that company, and is used for the repaving of streets occupied by that company. This money, however, cannot be used for other streets, and, consequently, your Honorable Bodies should make liberal appropriations for this work.

In connection with the repaving of streets I desire to call attention to the license fees that are now collected by the Bureau of Highways, as follows:

Letter Writing—Weight 1.5.

Write a letter of about 150 words to the Civil Service Commission, Philadelphia, on the subject: "Business colleges as a factor in the educational field." Mechanical arrangement, adherence to the subject and expression will be considered in marking this subject. Do not sign your name to the letter; use your examination number instead.

Penmanship—Weight 1.

This subject will be marked on the writing in the letter.

Plain Copy—Weight 1.

Make an exact copy of the following:

During the year there were 8,991 permits issued for improvements costing \$42,881,370; these permits were

for 9,820 dwellings, valued at \$22,108,930, an increase of 3,545 over 1908, and in value an increase of \$7,595,455. Of this number 8,734 were two-story dwellings valued at \$16,711,230, an increase over 1908 of 3,329 dwellings in number, \$6,330,780 in value.

There were 1,017 three-story dwellings, at a cost of \$5,012,500; an increase over 1908 of 215 in number, \$1,206,375 in value.

There were also 45 dwellings higher than three stories, costing \$347,200. Permits were also issued for 67 factories, valued at \$2,942,800; 25 office buildings, at \$2,921,350; 10 schools, at \$1,437,685; 30 tenement houses, at \$1,044,500; 287 stables and carriage houses, at \$654,160; 6 power houses, at \$551,500; 12 municipal buildings, at \$419,000; 29 amusement places, at \$336,855; 6 club houses, at \$285,000; 35 stores, at \$236,525; 52 workshops, at \$169,875; 5 hospitals, at \$111,900; 18 engine and boiler houses, at \$94,400; 1 dormitory, at \$92,000; 2 charitable institutions, at \$50,000; 2 parish houses, at \$42,000; 2 bank buildings, at \$35,000; 3 halls, at \$20,000; 1 library building, at \$20,000; 1 round house, at \$20,000; 1 railroad station, at \$17,625; 1 abbatoir, at \$15,000; 340 heaters, at \$213,000; 125 fire escapes, at \$50,200; 2,838 miscellaneous structures, at \$991,560, and 3,524 repairs, etc., at \$6,534,955.

Spelling—Weight 1.

1, vindicate; 2, invincible; 3, usury; 4, tuberculosis; 5, thermometer; 6, testimony; 7, symptom; 8, revenue; 9, reservoir; 10, punctuate; 11, prejudice; 12, perceptible; 13, oscillate; 14, opinion; 15, monitor; 16, metropolis; 17, mercantile; 18, literary; 19, jurisprudence; 20, memorial.

19 cs

STENOGRAPHER AND TYPEWRITER (MEN ONLY),
ANY DEPARTMENT.

\$1,000 to less than \$1,250 per annum, July 17, 1912.

Experience—Weight 1.

(See page 215.)

Arithmetic—Weight 1.

1. Arrange the following in tabular form: Add by columns and lines: The attendance at the Allentown Fair for one week was as follows: Monday, official, 384; other adults, 4,162; children, 875; single carriages, 489; double carriages, 164; automobiles, 375. Tuesday, other adults, 5,286; single carriages, 315; officials, 437; children, 374; automobiles, 452; double carriages, 125. Wednesday, officials, 311; children, 986; single carriages, 721; other adults, 11,488; double carriages, 209; automobiles, 721. Thursday, other adults, 21,865; automobiles, 772; officials, 478; children, 8,219; single carriages, 914; double carriages, 642. Friday, officials, 118; other adults, 8,211; single carriages, 136; double carriages, 59; children, 452; automobiles, 127. 2. A father left \$39,000, arranging his will so that his son received $\frac{5}{8}$ as much as his daughter. What sum did each receive? 3. Find the total cost of the following and arrange in bill form: 66 pounds pork at $12\frac{1}{2}$ cents; 148 pounds of veal at $16\frac{2}{3}$ cents; 248 boxes of strawberries at $6\frac{1}{4}$ cents; 48 pounds of honey at $62\frac{1}{2}$ cents; 60 bars of soap at $6\frac{2}{3}$ cents; 60 dozen eggs at $37\frac{1}{2}$ cents. 4. If .375 of a ton of coal cost \$1.25, what will 7.25 tons cost? 5. A man sells his house for \$800 and receives in payment a note for 90 days. After 30 days he has the note discounted at bank at 6 per cent. What does he receive for it? 6. On a bill of goods listed at \$645, choice is given between discounts of 20 per cent., 10 per cent. and 5 per cent. off, or a direct discount of

35 per cent. Which is better and how much? 7. A and B enter partnership, A with \$1,800 and B with \$900. After 8 months, B adds \$300 to his capital. Divide a profit of \$840 at the end of the year.

Dictation—Weight 3.

I herewith transmit to you the Second Annual Report of the Division of Tenement House Inspection.

This work is, comparatively speaking, new in this City, and it may be said in this country, excepting in the cities of New York and Chicago. Various social and philanthropic organizations in this City are co-operating with this Division by making complaint, friendly visits, and last, but not least, independent inspections for the purpose of assisting the work of the Division.

It is proper that every one should know the character of the work we are doing, and how closely it is allied with other municipal problems, for the purpose of inviting thought on the matter. Our work, as a whole, has been well received by the citizens, and should have the public's co-operation.

Your attention is especially directed to the statistical report which is appended. This report shows the work accomplished during the year 1909, but is not as complete as it might have been, because it was only possible to start that feature of the work late in November, and the compiling of all old records, besides the regular office routine, was no small task.

Recognizing the growing importance of this work and the need of additional legislation affecting the tenement-house problem, and the housing question in general, certain recommendations, based upon experience in the work and with the public, including builders, social workers and real estate operators, are made for incorporation into bills to be presented before the next State Legislature, which will convene in January, 1911.

A summary of the work of the year is as follows:

Application made for tenement house licenses for 1909	2,103
Applications approved	1,996
Applications approved, "Class A," at five (5) dollars each (574)	\$2,870 00
Applications approved, "Class B," at two (2) dollars each (1422)	2,844 00
Licenses pending	385
Applications cancelled	142
Total income for applications approved	\$5,714 00
Total expenditures for salaries	5,773 00

Letter Writing—Weight 1.5.

Write a letter, properly dated, addressed, etc., of about 150 words, to the Civil Service Commission of Philadelphia, on the subject: "Recreation Facilities of Philadelphia." Mechanical arrangement, adherence to the subject and expression will be considered in marking this subject. Do not sign your name to this letter.

Penmanship—Weight 1.

This subject will be marked on the writing in this letter.

Plain Copy—Weight 1.5.

Make an exact copy of the following:

I

AN ORDINANCE

To make an appropriation to the Coroner, for the year 1910.

Section 1. *The Select and Common Councils of the City of Philadelphia do ordain*, That the sum of forty-nine thousand eight hundred and twenty (49,820) dollars be, and the same is hereby, appropriated to the Coroner, for the year 1910.

Item 1. For salaries: Coroner (fixed by Act of Assembly), five thousand (5,000) dollars; deputy coroner (fixed by Act of Assembly), two thousand five hundred (2,500) dollars; chief clerk, one thousand five hundred

(1,500) dollars; three assistant clerks at one thousand two hundred (1,200) dollars each; three physicians, two thousand five hundred (2,500) dollars each; eleven district deputies, one thousand two hundred (1,200) dollars each; stenographer and typewriter, nine hundred (900) dollars; two detectives, one thousand five hundred (1,500) dollars each; janitor, seven hundred and twenty (720) dollars; total, thirty-seven thousand nine hundred and twenty (37,920) dollars; Provided that the amounts appropriated in this Item for Coroner, deputy coroner and clerk shall be taken from fees earned by the Coroner.

Item 2. For stationery, transportation, printing and supplies, one thousand two hundred (1,200) dollars.

Item 3. For keep of automobile for Coroner, six hundred (600) dollars.

Item 4. For examining and incidentals, two thousand (2,000) dollars.

Item 5. For witnesses, jury fees and burials, four thousand (4,000) dollars.

Item 6. For maintenance of two horses and wagons, eight hundred (800) dollars.

Item 7. For keep of horses, and for materials for post mortems, for Coroner's physicians, five hundred (500) dollars each; total, three thousand three hundred (3,300) dollars; Provided that the City Controller may counter-sign warrants for post-mortem materials against this item without advertising, upon the approval of bills by the Coroner.

And warrants shall be drawn by the Coroner in conformity with existing ordinances.

All ordinances or parts of ordinances inconsistent herewith be, and the same are hereby, repealed.

Approved the twenty-second day of December, A. D. 1909.

JOHN E. REYBURN,
Mayor of Philadelphia.

II

Make an exact copy of the following, being careful to observe the same spacing:

FIRE INSURANCE FUND.
ORDINANCE MARCH 29, 1904.

1909.		RECEIPTS.	
January 1, To cash balance			\$63,768 28
To cash, annual appropriation	\$25,000 00		
To cash, annual appropriation by Board of Public Education, as per ordinance of Councils		20,000 00	
To cash, interest on securities and deposits.		9,538 87	
To cash, loans matured		2,000 00	
To cash, returned premium on cancelled policy insurance		38 25	56,577 12
Total receipts			<u>\$120,345 40</u>

		EXPENDITURES.	
By cash, purchase \$102,700 City securities.	\$105,949 30		
By cash, fire losses paid	7,445 64		
By cash, adjuster's fees	16 50		
			<u>113,411 44</u>
Cash balance			\$6,933 96
Par value City securities			<u>257,900 00</u>
Total cash and securities			\$264,833 96
Contract for repairs to James Allison School, Fifteenth and Norris streets, damaged by fire, October 18, 1909, not yet completed, still outstanding			5,336 12
Leaving an actual balance of			<u>\$259,497 84</u>

Spelling—Weight 1.

1, density; 2, incumbrance; 3, circumstantial; 4, gratuitous; 5, reciprocity; 6, Fahrenheit; 7, rendezvous; 8, inflammation; 9, appendicitis; 10, consignment; 11, authorization; 12, servitude; 13, adulteration; 14, in-subordination; 15, bacteriology; 16, accumulation; 17, disbursement; 18, imprisonment; 19, contagious; 20, surety.

STENOGRAPHER AND TYPEWRITER (MEN AND WOMEN),
ANY DEPARTMENT.

\$1,250 to less than \$1,600 per annum, March 26, 1912.

Experience—Weight .5.

(See page 215.)

Arithmetic—Weight 1.

1. Find the monthly totals for each day of the week and the grand total for the month if the amount of business done during the four weeks of February was as follows:

	First week	Second week	Third week	Fourth week	Monthly total for each day of the week
Monday -----	378,457	843,876	958,846	876,849	—
Tuesday -----	567,689	768,394	376,958	768,954	—
Wednesday -----	37,864	54,898	67,696	865,678	—
Thursday -----	476,486	4,780	54,866	759,468	—
Friday -----	369,598	456,765	487,689	437,698	—
Saturday -----	854,965	898,879	45,676	948,624	—
Grand total -----	—	—	—	—	—

2. In a row of 50 dwellings, each contained the following water fixtures: 1 wash pave at \$3, 2 stationary wash tubs at \$1 each, 1 basin at \$1, 2 baths at \$3 each, 5 spigots at \$1 each. In addition each of 25 of the dwellings had: 1 hydrant in yard at \$2.50, 1 lawn sprinkler at \$5. In addition each of 4 of them had: 1 stable fixture at \$1, bakery or shop fixture at \$1, 1 fountain at \$5. What was the bill for water rent for the entire operation?

3. In 1910 there were in the City: Electric arc lights, 13,285; gas lamps, 23,119; gasoline lamps, 17,223. Of the total number of lights what was the approximate percentage of each kind?

4. Check the following bill, correcting any errors you may find:

27½ Doz. at \$.16 a dozen, \$4.40; 15¼ Doz. at \$.28 a dozen, \$4.25; 17 1/3 Doz. at \$.15¾ a dozen, \$2.75; 9¾ Doz. at \$.16 2/3 a dozen, \$1.75; 265 2/3 Doz. at \$.25 a dozen, \$67; 14 Doz. at \$1.25 a dozen, \$18.95; 29 Doz. at \$.12½ a dozen, \$3.65. Total, \$101.65. Discount 10 and 5 per cent., \$14.74. Result, \$86.91.

5. A note for \$650 bearing interest at 6 per cent. was discounted 90 days after date. Discount, 6 per cent. Find the net proceeds.

6. The following decimals are to be reduced to common fractions and added: .666 2/3, .125, .33 1/3, .25, .4, .5, .16 2/3 and .0625.

7. If 25¾ gross of pens cost \$28.96⅞, what will 45 gross cost?

8. 75 per cent. of a number is 876. What is 2/3 of the same number?

9. In an office where the regular office hours are 8 hours a day, 16 clerks must work 10 hours a day to keep the work up to date. How many extra clerks should be employed to do the work in regular office hours, working at the same rate?

10. B purchased two houses, paying the same for each. He sold one of them for \$37,250, gaining 25 per cent., and the other for \$27,118. Did he gain or lose on the latter sale, and how many per cent.?

Copying—Weight 1.

Make an exact copy of the following:

STATEMENT OF PUMPAGE FOR THE YEARS 1907, 1908 AND
1909.

	1907 Gallons	1908 Gallons	1909 Gallons
Pumped to reservoirs	116,882,212,622	160,264,605,178	194,506,704,802
Equal to gallons pumped 100 feet high	242,285,589,708	278,534,502,507	313,906,826,887

Note.—“The pumped to reservoirs” includes 83,373,-937,290 gallons, repumpage to higher levels at Belmont, Roxborough, Mt. Airy and Frankford high service stations, and also the low service pumpage to filter beds at the Roxborough and Torresdale filter plants, which, deducted from the total pumped, gives a total pumped from the rivers of 111,129,767,510 gallons.

The quantity stored in reservoirs on December 31, 1909, was 566,409,399 gallons less than that stored on December 31, 1908. This quantity added to the total pumpage from the rivers makes the total consumption for 1909 111,696,176,909 gallons. The cost of pumpage is based on the total pumpage. The consumption per capita is computed from the average consumption during 1909 of 306,016,923 gallons per day.

	1907 Gallons	1908 Gallons	1909 Gallons
Pumped by water power.....	8,138,114,825	5,809,821,111	1,048,742,639
Pumped by steam power.....	108,749,097,797	154,894,874,067	198,454,962,168
Largest quantity pumped in 24 hours	868,585,483	508,704,800	625,956,908
Smallest quantity pumped in 24 hours	199,486,981	329,016,621	287,208,410

Year	Average daily con- sumption Gallons	Average consumption in gallons per capita per day Gallons	Cost of one million gal- lons pumped 100 feet high
1907 -----	302,436,641	201.7	\$5 68
1908 -----	322,048,980	210.2	5 58
1909 -----	306,016,923	197.2	4 43

1907. Estimating the population at 1,499,747.

1908. Estimating the population at 1,531,752.

1909. Estimating the population at 1,552,000.

The decreased cost of pumpage per million gallons raised 100 feet high is \$1.15 less than that of the preceding year.

Dictation—Weight 3.

Exercise I.—Testimony.

(Instructions before dictation. The questioner is Representative Landis and the witness is Mr. J. M. McKay. Place names before each question and answer.)

Mr. J. M. McKay appeared before the sub-committee.

Representative Landis: You may give your name.

Mr. McKay: J. M. McKay.

Representative Landis: What position do you occupy now?

Mr. McKay: Foreman of the folding room of the House.

Representative Landis: How long have you been acting in that capacity, Mr. McKay?

Mr. McKay: Nineteen years.

Representative Landis: How many documents does your inventory show there are on hand now in the folding room to the credit of members?

Mr. McKay: One million nine hundred thousand, in round numbers; 1,915,476 is the exact number.

Representative Landis: That includes publications in which there are from one to seven and eight volumes as one volume?

Mr. McKay: Yes, sir.

Representative Landis: Then it is safe to say that in actual volumes there are how many?

Mr. McKay: I would say 2,500,000.

Representative Landis: How many of these are simply pamphlets?

Mr. McKay: We have about 150,000 pamphlets.

Representative Landis: Then you would say there are in the folding room of the House to-day in the neighborhood of 2,350,000 bound volumes?

Mr. McKay: Well, no; not taking into consideration the unbound matter that is not classed as pamphlet matter, such as laws.

Representative Landis: How many volumes are there of these?

Mr. McKay: I should judge there would be 100,000 of those laws and other unbound matter—large books.

Representative Landis: So you would say that there would be two million and a quarter?

Mr. McKay: Two million and a quarter, probably.

Representative Landis: Of bound volumes?

Mr. McKay: Yes, sir.

Representative Landis: Some of them how old?

Mr. McKay: Running back to 1864. There are very few of them, of course.

Representative Landis: Is the increase going on rapidly?

Mr. McKay: Yes, sir.

Representative Landis. You store a great many of these volumes in the basement of the Capitol?

Mr. McKay: Yes, sir.

Representative Landis: Where are the rest of them stored?

Mr. McKay: They are stored in the wareroom that is occupied by us over at First and I Streets N. E.

Representative Landis: What proportion of these documents are stored there?

Mr. McKay: About one-third in the warehouse.

Representative Landis: And the rest in the basement of the Capitol?

Mr. McKay: Yes, sir.

Representative Landis: Is the Government at considerable expense in the matter of repiling and moving from place to place these accumulated documents?

Mr. McKay: Not so very much, sir. We do all the transfer from our place, from the Annex to the House, with one team wagon, with a driver and assistant. We find that we can do it very conveniently.

Representative Landis: Are you troubled much with rats in the basement of the Capitol?

Mr. McKay: Some little, but they do not destroy the books. They eat the paste out of the bucket, and they are annoying inasmuch as they are about the place, but they do not do any damage to the documents—none at all.

Representative Landis: What have you to suggest in the matter of correcting the waste and extravagance and the poor methods of distribution in the matter of public documents?

Mr. McKay: I would suggest cutting down a great many of the reports in number—reducing the number printed—as we find them in our department, what we think are almost useless.

Representative Landis: Have you prepared a list of the reports you would cut down?

Mr. McKay: Somewhat briefly, I have; yes, sir.

Representative Landis: Could you add to that if you had more time?

Mr. McKay: I think not, sir.

Exercise II.—Letter.

DEAR SIR:—The Brooklyn method of washing was continued on the twelve filters at Belmont, which last year gave good results after the applied water had been subjected to preliminary treatment, with equally satisfactory results this year. The runs were not as long as those cleaned by the usual scraping method, but the cost was very much reduced as was also the time the filters were out of service.

It has also proved successful on one filter that was operated at a six-gallon rate. It was expected that the plan could not continue indefinitely, and from indications it is probable that in the immediate future it will be necessary to remove and wash the upper four to six inches of sand from some of the beds, but even with this additional expense it will prove to be an economical proposition.

The effluent—both for bacterial and turbidity count—has at all times been satisfactory.

The eighteen beds at Belmont are now being washed by this method, as well as the five at Lower Roxborough, also two filters at Upper Roxborough are being so washed in order to demonstrate its adaptability to applied water of about ten days' sedimentation.

It is hardly necessary to comment on the wisdom of retaining our water system under the present form of management nor to point out to your Honorable Bodies the benefit to be derived by the economic administration of what has been justly called "Philadelphia's great manufacturing plant." In considering the subject, therefore, it should be treated in the light of a manufacturing plant,

and if it is a revenue producer, there exists no necessity for a change in its form of management.

For your information and guidance I have compiled from the data submitted by Chief Dunlap in his annual report for the year 1909 the following statistics, and I believe they conclusively prove the value of the water works.

Yours truly,

(To be dictated at the rate of 140 words a minute.
Times: 2 minutes, 20 seconds.)

Letter Writing—Weight 1.5.

Write a letter of about 150 words to the Civil Service Commission, Philadelphia, on the subject: "Philadelphia—an educational centre." Mechanical arrangement, adherence to the subject, and expression will be considered in marking this subject. Do not sign your name to this letter; use your examination number instead.

Penmanship—Weight 1.

This subject will be marked on the writing in the letter.

Spelling—Weight 1.

1, epidemic; 2, excelsior; 3, formula; 4, gigantic; 5, gratuitous; 6, hemorrhage; 7, hydrometer; 8, indelible; 9, jurisdiction; 10, ledger; 11, mathematics; 12, mechanical; 13, necessitate; 14, originate; 15, perimeter; 16, posterity; 17, receptacle; 18, reprehensible; 19, segregate; 20, transitory.

Tabulation—Weight 1.

Arrange the following data in convenient tabular form, writing suitable headings, etc.:

During 1908 the annual appropriation for the Bureaus of the Department of Public Works was: Director's Office,

\$30,680; Gas, \$10,000; Highways, \$2,607,761; Lighting, \$433,015; Surveys, \$300,680; Water, \$1,064,627; total, \$4,446,763; total for 1907, \$3,710,608.

Additional appropriations and transfers were: Director's Office, \$11,200; Highways, \$4,149,662; Surveys, \$4,357,073; Water, \$2,099,616; total, \$10,617,551. Total for 1907, \$8,499,119. Balance from previous years: Highways, \$2,031,365; Surveys, \$2,085,285; Water, \$2,617,866; total, \$7,734,516; total for 1907, \$8,511,764.

Net amount available for 1908: Director's Office, \$41,880; Gas, \$10,000; Highways, \$3,722,851; Lighting, \$433,015; Surveys, \$7,738,963; Water, \$5,612,395; total, \$22,559,104. Total for 1907, \$17,454,602.

**STENOGRAPHER AND TYPEWRITER (MEN AND WOMEN),
ANY DEPARTMENT.**

\$1,250 to less than \$1,600 per annum, July 18, 1912.

Experience—Weight 1.

(See page 215.)

Arithmetic—Weight 1.

1. A series of five games were played by the Detroit and Athletic clubs. The attendance was as follows: Tuesday, bleachers, 11,510; upper pavilion, 2,150; lower pavilion, 4,372; boxes, 527; Wednesday, lower pavilion, 4,528; bleachers, 12,750; upper pavilion, 1,275; boxes, 583; Thursday, upper pavilion, 2,078; boxes, 472; bleachers, 14,250; lower pavilion, 4,781; Friday, bleachers, 14,525; boxes, 626; upper pavilion, 1,822; lower pavilion, 6,403; Saturday, boxes, 792; upper pavilion, 2,675; bleachers, 16,975; lower pavilion, 6,916. The admission to the bleachers cost 50 cents; to the upper pavilion, \$1.50; to the lower pavilion \$1 and to the boxes \$2. Tabulate the attendance and calculate the receipts;

also calculate the percentage of the entire receipts collected from the bleachers, upper pavilion, lower pavilion and boxes. 2. A owns $\frac{3}{4}$ of a plant and B owns the remainder. Three-quarters of the difference of their shares is worth \$2,400. What is the value of the plant? 3. A bankrupt owes A \$350; B, \$680.50; C, \$65; D, \$500; E, 980.50. His property nets \$1,648.64. How much does each creditor receive? How much does he pay on the dollar? 4. Find the total discount of the following: \$125 for 48 days at 6 per cent.; \$5,036 for 60 days at $4\frac{1}{2}$ per cent.; \$6,420 for 30 days at 3 per cent.; \$527 for 90 days at $5\frac{1}{2}$ per cent. 5. Johnson and Smith engaged in the contracting business. They entered into a contract with Carlisle for the construction of a house for \$4,000. Independently of one another, Johnson paid \$1,500 for lumber, while Smith paid \$800 for brick. Subsequently, Johnson paid \$300 for labor and Smith expended \$400 for hauling. This unsystematic procedure not only characterized their payments, but also their collections, for in the meantime Johnson collected from Carlisle \$1,450 and Smith collected \$1,100. There still were bills unpaid to the amount of \$500. After the house was built, they dissolved partnership. How should the account be settled? 6. An agent sold 850 barrels of flour at \$5.25 a barrel, and charged $2\frac{1}{2}$ per cent. commission. What was his commission?

Copying and Tabulation—Weight 2.

Exercise I.—Plain Copy.

Make an exact copy of the following:

AN ORDINANCE.

To make an appropriation to the Prothonotary of the Courts of Common Pleas, for the year 1910.

Section 1. *The Select and Common Councils of the*

City of Philadelphia do ordain, That the sum of eighty-four thousand, seven hundred and seventy (84,770) dollars be, and the same is hereby, appropriated to the Prothonotary of the Courts of Common Pleas, for the year 1910.

Item 1. For salaries: Prothonotary (fixed by Act of Assembly), ten thousand (10,000) dollars; Deputy Prothonotary, three thousand five hundred (3,500) dollars; Second Deputy Prothonotary, two thousand one hundred (2,100) dollars; first clerk, two thousand (2,000) dollars; second clerk and fee clerk, one thousand five hundred (1,500) dollars each; fee clerk, one thousand two hundred (1,200) dollars; five court clerks (fixed by Act of Assembly), two thousand five hundred (2,500) each; four judgment search clerks, three locality clerks, five appearance clerks, mechanics' lien clerk, five writ clerks, recording clerk, two index clerks and three exemplification clerks, at one thousand two hundred (1,200) dollars each; eight recording and miscellaneous clerks, one thousand (1,000) dollars each; two custodians of records and custodian of books, five hundred (500) dollars; two copyists and messenger, eight hundred (800) dollars each; total, seventy-six thousand seven hundred (76,700) dollars; *Provided*, That the amount appropriated to this item shall be taken from fees earned by the Prothonotary.

Item 2. For blank books, blanks, rebinding and stationery, five thousand (5,000) dollars.

Item 3. For extra clerk, six hundred (600) dollars.

Item 4. For janitor, seven hundred and twenty (720) dollars.

Item 5. For cleaning offices, seven hundred and fifty (750) dollars.

Item 6. For incidentals, one thousand (1,000) dollars; *Provided*, That warrants may be countersigned on this
20 cs

item on the approval of bills by the Prothonotary without advertising.

And warrants shall be drawn by the Prothonotary of the Courts of Common Pleas in conformity with existing ordinances.

All ordinances or parts of ordinances inconsistent herewith be and the same are hereby repealed.

Approved the twenty-second day of December, A. D. 1909.

JOHN E. REYBURN,
Mayor of Philadelphia.

Exercise II.—Tabulation.

Arrange the following data in convenient tabular form, with appropriate headings, totals, summaries, etc.:

Cash receipts of Street Cleaning Department, Manhattan and the Bronx, 1902, trimming at scows and dumps, \$90,370.63; incumbrance redemptions, \$10,019.45; incumbrance sales, \$685.49; sales of condemned property, \$9,648.90; sale of ashes, \$355.49; damages to department property, \$14.46; 1904, demurrage, \$15.00; sale of ashes, \$200.35; incumbrance sales, \$673.73; trimming at scows and dumps, \$60,444.31; damages to department property, \$1.97; incumbrance redemptions, \$9,187.30; sale of condemned property, \$5,877.32; Brooklyn, 1905, privilege of dumping, \$30; incumbrance sales, \$120.87; sales of condemned property, \$5,647.94; incumbrance redemptions, \$1,617.36; Manhattan and the Bronx, 1903, damages to department property, \$4.82; sales of condemned property, \$6,869.52; trimming at scows and dumps, \$70,151.69; incumbrance redemptions, \$7,975.05; sale of ashes, \$537.72; incumbrance sales, \$624.86. Manhattan and the Bronx, 1905: Sale of ashes, \$860.16; trimming at scows and dumps, \$58,028; sales of condemned property, \$15,184.12; in-

cumbrance sales, \$1,211.20; for department property lost, \$1.97; incumbrance redemptions, \$12,522.55; damage to department property, \$960.22. Brooklyn, 1904: Sale of condemned property, \$6,088.37; incumbrance redemptions, \$775.90; trimming at scows and dumps, \$1,391.14; incumbrance sales, \$61.47. Brooklyn, 1902: privilege of dumping, \$119; incumbrance sales, \$188.91; trimming at scows and dumps, \$2,208.57; incumbrance redemptions, \$1,989; sales of condemned property, \$935.10. Brooklyn, 1903: Sales of condemned property, \$6,730.52; incumbrance sales, \$105.48; trimming at scows and dumps, \$893.03; incumbrance redemptions, \$507.50.

Dictation—Weight 3.

Exercise I.—Article.

At the rate of 140 words a minute.

Not Only Quantity, but Change of Air is Needed.

It has been well said by Professor Muirhead that "The problem of the last generation was to provide gas and water; the problem of the next is to provide light and air." Through the crusade for the prevention of tuberculosis the public is becoming acquainted with the fact that outdoor fresh air is the prime essential for good health. If every one could sleep out of doors in a good atmosphere, it is probable that a large share of all health problems would disappear. Evidently the chief requisite for a good house, therefore, is the assurance of atmospheric conditions approaching as nearly as possible the benefits of outdoor life. To this end it is already the practice in many cities to require in every living room an allowance of from five hundred and sixty to one thousand cubic feet of air space for each adult, and half that amount for every child under ten years old. Although four hundred cubic feet of air space is specified in our City, it

would seem that five hundred cubic feet of room, or a space measuring eight feet in each of the three dimensions, should be a small enough minimum for the living quarters of a free citizen. In addition, it is most important to work out in the future what has not yet been taken up in other cities, a provision for regular circulation of air and for systematic supplies of fresh air. It is stated that "an adult will render one thousand cubic feet of air impure in twenty minutes by adding two feet of carbonic acid to each one thousand." It is evident, then, that at least one thousand cubic feet of fresh air for each occupant should flow into each room every twenty minutes. Sir Douglas Galton has put the minimum at one thousand cubic feet per person per hour. Other authorities state that as much as one thousand eight hundred cubic feet are required per person per hour. It is a matter of familiar experience in theatres and other places of assembly that there needs to be required the regular injection of air into such places of an adequate number of cubic feet of fresh air for each person whom the place accommodates. In homes of poor people ignorance often complicates conditions, large families crowd together in small quarters, with every window closed tightly and a lamp burning all night for protection against imaginary dangers. It would be well, and it should not be impossible to specify in the building laws that every room should be provided with means of automatic ventilation proportionate to the capacity of the room. It would be desirable to provide, if possible, that these openings for ventilation shall be distributed about the room and so far as possible concealed, in order to make it difficult for the occupants to close them. The open fire places prevalent in England provide in this way for the constant circulation of the air in rooms where they are located.

Exercise II.—Testimony.

Before the Committee of Reform in the Civil Service, House of Representatives, Washington, D. C., Friday, March 13, 1908. Statement of Hon. Joseph A. Goulden, a member of Congress from the State of New York:

Mr. Golden: I am here simply as a spectator, interested in collecting and collating, with the aid of the Committee and with the authorities, statistics as to the conditions as they exist now in various municipalities of this country, various corporations, and in foreign countries. I hope to have this data before you within the next ten days, if you will allow me that length of time. It is a much larger contract than I thought it would be when I began.

Mr. Mann: Will you please include in that tabulation an accurate statement concerning the school pension fund of the District of Columbia right under our observation?

Mr. Goulden: No, I am sorry that I cannot do so, as we have no such provision in this City, but I can include in that statement the retirement fund of the City of New York, and in that connection I was one of the fathers of that fund. As a Commissioner in 1893, I visited the schools and discovered that there was a marked degree of inefficiency on the part of a few of the principals and teachers who had served for forty years, fifty years, and even sixty years, and at once helped to bring in a resolution to provide for a retirement fund, and to-day, after fourteen years' experience, I think it was one of the best things that ever happened to the Public Schools of the City of New York. We have a retirement list. The minimum rate is six hundred dollars and the maximum rate one thousand five hundred dollars, with two thousand dollars for superintendents, the average being about seven hundred dollars a year. In the month of February just closed the cost was sixty thousand dollars.

It averages about sixty thousand dollars a month. We have funds sufficient to retire all that need it.

Mr. Mann: Because they have not money enough?

Mr. Goulden: Yes, sir. We retire them as fast as is required. It works admirably. We also have the fire, health and police department retirement fund, and they are all based upon an assessment upon the salaries of the members of these organizations and other receipts. For example, 1 per cent. of the salaries of the teachers.

Mr. Mann: And what else?

Mr. Goulden: Five per cent. of the fees obtained from licenses.

Mr. Mann: Saloons?

Mr. Goulden: Yes, and the fines that arise from absence. For example, a teacher getting one hundred and fifty dollars a month is absent a week or two weeks. On long continued illness there is no fine until after three weeks have elapsed.

Mr. Mann: Do you know what the total license fees of the city of New York are?

Mr. Goulden: I do not, but I will furnish that information later.

Mr. Mann: Is there any other fund contributed to the teachers' pension fund?

Mr. Goulden: No; we have a fund of nearly one million two hundred thousand dollars in the treasury. You spoke of the hazardous occupations. I have been connected with a large insurance company for a great many years, and there is very little of that now considered. The only exceptions we make are the life-saving service, the manufacturers of explosives, freight conductors, freight brakemen, balloonists, and submarine boat operatives.

Mr. Mann: You do not include the railway mail clerks?

Mr. Goulden: No; some years ago we had a clause in

our policies that an officer of the army going to the Philippines or to the tropics was obliged to pay an extra rate for that hazard. We stopped that.

Mr. Mann: Was that from patriotic motives?

Mr. Goulden: No; however, that may have had its influence.

Thereupon the Committee adjourned.

Letter Writing—Weight 1.

Write a letter, properly dated, addressed, etc., of about 150 words, to the Civil Service Commission, Philadelphia, on the subject, "What are the essentials of a good private secretary?" Mechanical arrangement, adherence to the subject and expression will be considered in marking this subject. Do not sign your name to this letter.

Penmanship—Weight 1.

This subject will be marked on the writing in this letter.

Spelling—Weight 1.

Write the correct form of each of the following words:

1, subpoena; 2, homeopathic; 3, presentiment; 4, suspicious; 5, electrification; 6, flagrant; 7, propriety; 8, litigation; 9, contributory; 10, beneficiary; 11, authenticity; 12, chandelier; 13, casualties; 14, incompetency; 15, vulcanize; 16, unostentatously; 17, sympathetic; 18, indefensible; 19, judiciary; 20, monopolization.

STENOGRAPHER AND TYPEWRITER (MEN).

ANY DEPARTMENT.

\$1,250 to less than \$1,600 per annum, December 3, 1912.

Arithmetic—Weight 1.

1. In 1910 the values of real and personal property and the tax levy in the several boroughs of New York City were as follows:

Borough	Assessed valuation real estate	Assessed valuation personal	Tax levy
Manhattan -----	\$4,743,916,785	\$298,080,453	\$68,632,301
Bronx -----	498,767,919	7,716,550	8,315,420
Brooklyn -----	1,404,066,521	50,332,025	26,500,000
Queens -----	334,508,900	5,358,480	6,155,282
Richmond -----	67,917,430	2,207,487	1,314,850
Totals-----			

Find the totals and the tax rate per hundred dollars of each borough. 2. Find the total cost of: 72 pounds at 16 $\frac{2}{3}$ cents, 48 pounds at 61 $\frac{1}{4}$ cents, 32 pounds at 121 $\frac{1}{2}$ cents, 56 pounds at 371 $\frac{1}{2}$ cents. 3. I bought a quantity of cloth for \$180. By selling it at \$2 per yard I gained $\frac{1}{3}$ of the cost. How many yards were there? 4. A park is 80 rods long and 56 rods wide. Around it is a brick walk 8 feet wide. The exposed surface of each brick is 4 inches by 8 inches. Find the cost of the brick at \$7.50 per 1,000. 5. Find the total amount of bank discount and proceeds of: \$120 for 33 days at 6 per cent, \$1,320 for 48 days at 41 $\frac{1}{2}$ per cent, \$6,000 for 120 days at 4.4 per cent, \$2,400 for 90 days at 5.4 per cent. 6. An agent sells \$8,000 of hardware on a commission of 21 $\frac{1}{2}$ per cent. He pays freight charges \$162.50, drayage \$68.50 and charges 21 $\frac{1}{2}$ per cent for guaranteeing the payment. What are the net proceeds of the sales? 7. An agent sold three farms for \$12,750, the price of the second was 50 per cent. more than the price of the first, and if the third was 30 per cent. less than the price of both the others, find the price of each farm. 8. Mr. J. C. Flint, of St. Louis, Mo., on July 30, 1910, bought of the Hoyt Hardware Company, Kansas City, Mo., 3 dozen chisels at \$5.60 per dozen, 2 dozen hand saws at \$7.50 per dozen, 4 dozen hammers at \$4.80 per dozen. Less two discounts of 25

per cent and 25 per cent. Copy in form of a bill to Flint with the amount due Hoyt.

Copying—Weight 2.

Make an exact copy of both the following extracts, being careful to observe the same spacing. Put each on separate sheets:

I.

As long as wind and water were used only in exceptional cases, and while even coal was imperfectly exploited, we were, like the primitive people, satisfied with the gifts yielded voluntarily by the sun and without any special effort.

To-day, electricity is more and more subjecting to our service the forces of nature—the wind and the waves; coal and water; gas and oils; the treasures at our disposal find a better and more rational utilization, which creates a surplus energy, that is, of national wealth. But the more the applications of electricity are generalized, the more will open fires disappear from the household, the studio and the factory. Fires will continue to flame only in the great generating stations.

It is certain that this tendency will bring us closer to the model we find in nature, which needs no flame for the production of light, heat and power; the rays of the sun are the one inexhaustible force. In examining more closely physical phenomena, we see that a rational and perfect utilization of time, matter and power, is the fundamental law and ultimate secret of nature, and that if the final goal of civilization consists of imitating as nearly as possible the mechanism of nature, electricity has done more in a few years to attain this goal than all the anterior centuries.

Wherever electricity has set in operation we achieve an increase of security and of yields, with a less expenditure

of matter, a replacement of muscular fibre by mechanical motor force—in other words an increasing spiritualization of labor.

II.

APPENDIX C.

TABLES PREPARED BY HERBERT D. BROWN, SHOWING SALARY DEDUCTIONS UNDER GIL- LETT OR GOULDEN BILLS.

TABLE 1.—Showing per cent. required to be deducted monthly from any salary to provide an annuity for a male at age of 70 equal to $1\frac{1}{2}$ per cent. of annual salary for each year of service. Illustrations: $\$1,200$ (salary $\times 1\frac{1}{2}$ (per cent.) = $\$18 \times 50$ (years of service) = $\$900$ (amount of annuity).

(a) Age of retirement. (b) Age of entrance to service. (c) Years of service. (d) Amount of annuity to be provided for on retirement of age shown in column (a). (e) Cost of \$100 annuity, for a male, at age shown in column (a), first payment in one year after retirement. Interest at $3\frac{1}{2}$ per cent. per annum, compounded annually. (f) Cost of annuity shown in column (b). (g) Amount to which a deposit of \$1 a month, first payment immediate, will accumulate at 4 per cent. per annum, compound interest, at end of years shown in column (c). (h) Amount of monthly deduction required from monthly salary of \$100 (per cent. of other salaries), during years shown in column (c), to accumulate sum shown in column (f). Interest at 4 per cent. per annum, compounded annually.)

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
70	20	50	\$900 00	\$742 00	\$6,678 00	\$1,871 48	\$8,568
70	25	45	810 00	742 00	6,010 20	1,488 64	4,061
70	30	40	720 00	742 00	5,342 40	1,164 87	4,586
70	35	35	680 00	742 00	4,674 60	902 87	5,177
70	40	30	540 00	742 00	4,006 80	687 52	5,828
70	45	25	450 00	742 00	3,339 00	510 52	6,540
70	50	20	360 00	742 00	2,671 20	365 04	7,317
70	55	15	270 00	742 00	2,006 40	245 46	8,102
70	60	10	180 00	742 00	1,336 60	147 18	9,075

Dictation and Transcription—Weight 4.

WHY WE HAVE SO MANY FIRES.

The Bureau of Manufacturers of the Department of Commerce and Labor has compiled these figures: During the year nineteen hundred and seven the loss by fire in the United States was two dollars and fifty-four cents per person. The cost of fire protection was two dollars and eighty-two cents per person. The total fire loss and outlay for protection was, therefore, five dollars and thirty-six cents per person. The following table shows fire losses in American and European cities:

Table of Fire Losses per Person.

* Population of cities—United States—Europe—Ten thousand to thirty thousand, two dollars and thirty-seven cents—eighty-one cents; thirty thousand to fifty thousand, three dollars and twenty-eight cents—seventy-two cents; fifty thousand to one hundred thousand, two dollars and forty-seven cents—one dollar and sixty-seven cents; one hundred thousand to three hundred thousand, two dollars and twenty-four cents—sixty-five cents; more than three hundred thousand, two dollars and twenty-four cents—sixty-five cents.*

*The portion between the stars should be tabulated by the applicants.

The chief reason for this difference, as Chief Croker has pointed out in this magazine, is not physical; it is the difference between a well disciplined, careful population and a rushing population. It is a deep difference in the habits of the people. An interesting confirmation of this fact is found in an article in Hunt's "Merchants' Magazine" for September, eighteen hundred and fifty-six, in which the latest annual reports then available showed that London had a fire to every three hundred and twenty-three buildings, and New York a fire to every one hundred and forty-six buildings—about the same difference that you will find to-day.

Letter Writing—Weight 1.

Write a letter of about 150 words to Peter Bolger, Secretary, Civil Service Commission, Philadelphia, on the subject: "Recent improvements that tend to increase the pleasure or decrease the cost of living in Philadelphia." Sign the letter "John Doe." In grading this letter the following points will be considered: Form, grammar, style and ideas.

Penmanship—Weight 1.

In grading this subject all the writing in the applicant's examination papers will be considered.

Spelling—Weight 1.

Write the correct form of each of the following words:

1, embarrassment; 2, chauffeur; 3, atheletic; 4, enfranchisement; 5, seperation; 6, chandulers; 7, ventilation; 8, sistom; 9, aparatis; 10, coresspondance; 11, phamplet; 12, resusetate; 13, preventable; 14, quadrelataral; 15, wheel-right; 16, nessessery; 17, mutilate; 18, beutefil; 19, centenyal; 20, mechanism.

STOREKEEPER, ANY DEPARTMENT,
less than \$800 per annum, July 11, 1912.

Training and Experience—Weight 2.

(See page 215.)

Arithmetic—Weight 1.5.

1. Add: $3,375\frac{1}{2}$, $6,862\frac{1}{4}$, $975\frac{2}{3}$, $1,762\frac{1}{2}$, $1,895\frac{1}{3}$, $654\frac{3}{4}$. 2. How much oil will 7 barrels hold, if each barrel contains 35 gallons and 2 quarts? 3. If a horse eats 12 quarts of oats per day, how long will 10 bushels, 1 peck, 4 quarts last him? 4. What will 8 pounds 6 ounces of sugar cost at 8 cents a pound? 5. What is the cost of 48 pounds bacon at $12\frac{1}{2}$ cents pound, 80 gallons gasoline at $12\frac{1}{2}$ cents, 36 yards ribbon at $22\frac{1}{3}$ cents, 80 pounds coffee at 32 cents? 6. Apples sell at \$1.28 a bushel. How much money will 24 barrels bring, each containing $2\frac{1}{2}$ bushels? 7. Find the cost of 16,824 pounds coal at \$4.68 per ton.

Bookkeeping—Weight 1.

1. April 12, J. D. Farley & Son, Trenton, N. J., bought of Cobb, Bates & Co., Boston, Mass., 2,500 pounds green Java coffee. What will the coffee cost at 30 cents a pound, less a trade discount of 10 per cent.? Arrange the problem in bill form. 2. Messrs. White & Wyckoff, Holyoke, Mass., bought of C. E. Stevens & Co., terms net 30 days, 100 gross pens at 80 cents; 25 gross lead pencils at \$3.20; 50 packages record cards at 40 cents, less discount of $12\frac{1}{2}$ per cent. Put in bill form and receipt bill. 3. Journalize the following: W. E. Holt commenced business June 1, 1912. Bought of L. H. Smythe, 200 barrels beef at \$13. Paid cash \$600 and the rest on account. Bought of A. D. Larkins, 50 barrels flour at \$7.50; 25 barrels pork at \$16 and gave his note at 30 days. June 2, sold Chas. Hamlin, 35 barrels flour at \$7.75; 20 barrels pork at \$18. Hamlin paid him cash \$500 and the balance on account. June 3, sold F. G. Clark 150 barrels

beef at \$14.50 cash. June 15, W. E. Holt prepaid his note, less the discount for the unexpired time. 4. Post the foregoing (question 3) in ledger. 5. What books are used in double-entry bookkeeping? 6. Put in the form of a statement the following: Resources: Cash, \$362.04; merchandise inventory, \$5,600; Reed & Mills, \$350; bills receivable, \$150. Liabilities: E. H. French, \$500; bills payable, \$500; M. Dage, \$250. Find the excess of resources over liabilities.

Penmanship—Weight .5.

This subject will be marked on the entire written examination of the applicant.

Practical Questions—Weight 4.5.

1. What records would you keep of the potatoes you handle? 2. What is the smallest space in which the following can be properly stored and how should they be arranged: 50 barrels flour, 2 gross blankets, 20 kegs nails, 25 boxes soap (one gross each), 24 cases canned peas (4 dozen each), 5 cases shoes (4 dozen each), 10 crates onions, 20 barrels sugar? 3. What changes would you insist upon before approving the following bill, if you had refused to accept 2 barrels flour, 3 bushels potatoes and $2\frac{1}{2}$ dozen canned corn: Two gross canned beans at $3\frac{1}{2}$ cents, \$9.08; 29 bushels potatoes at 98 cents, \$27.42; 9 barrels flour at \$6.25, \$55.15; 3 gross canned corn at 6 cents, \$24.82; \$115.39?

Spelling—Weight .5.

Write the correct form of each of the following words:

1, property; 2, agriculture; 3, experement; 4, construction; 5, transaction; 6, vigorous; 7, intelligence; 8, monoplly; 9, dividend; 10, morgage; 11, syndcate; 12, industrile; 13, pettition; 14, substitution; 15, compulserly; 16, aproximate; 17, acommodation; 18, currancy; 19, classifide; 20, quotation.

STOREKEEPER, ANY DEPARTMENT,
\$800 to less than \$1,200 per annum, July 10, 1912.

Experience—Weight 2.

(See page 215.)

Arithmetic—Weight 1.5.

1. Find the sum of $\frac{1}{3}$, $\frac{3}{8}$, $\frac{7}{12}$, $\frac{11}{24}$. 2. A farmer sold 11 dozen eggs at $14\frac{1}{2}$ cents a dozen and took his pay in sugar at $5\frac{1}{2}$ cents a pound. How many pounds of sugar did he receive? 3. Mr. Brown earns $\$40\frac{3}{4}$ a month and his son $\frac{7}{8}$ as much. How much do they earn together? 4. If coffee is $37\frac{1}{2}$ cents a pound, how many pounds can be bought for \$60? 5. Find the total cost of the following: sixty-six pounds pork at $12\frac{1}{2}$ cents, 148 pounds veal at $16\frac{2}{3}$ cents, 48 boxes berries at 25 cents, 48 pounds honey at $33\frac{1}{3}$ cents, 64 bars of soap at $6\frac{1}{4}$ cents, 60 dozen eggs at $16\frac{2}{3}$ cents. 6. A man having a yearly income of \$1,500 spends 80 per cent of it the first year, 75 per cent. of it the second year, $62\frac{1}{2}$ per cent. of it the third. How much does he save in three years? 7. Find the total cost of the following: Two hundred and forty reams paper at $33\frac{1}{3}$ cents quire, 50 barrels gasoline at $12\frac{1}{2}$ cents gallon, 28,640 pounds coal at \$5.25 per ton, 9 pounds and 4 ounces allspice at 30 cents per pound, 562 dozen lead pencils at \$3.60 per gross.

Bookkeeping—Weight 1.

James Smith commenced business January 25, 1912, with \$5,000 cash. January 26, bought of E. L. King 60 barrels beef at \$12; paid cash \$200, balance on account. Bought of French & Co., on account, 7 barrels sugar, 265 pounds each, at 7 cents; 5 chests Japan tea, 60 pounds each, at 60 cents. Bought of Miller & Beach, on 30-day note, 35 barrels pork at \$9; 10 barrels lard, 200 pounds each, at $8\frac{1}{2}$ cents. Bought of J. D. Morgan, on account,

50 barrels flour at \$5. January 27, sold N. Marsh 25 barrels pork at \$9; 25 barrels beef at \$14. Received cash \$225; his note at 3 months for balance. Sold A. O. Steels, on account, 25 barrels beef at \$14.50; 5 barrels lard, 200 pounds each, at 10 cents; 20 barrels flour at \$6. January 28, sold L. M. Hording 3 chests Japan tea, 60 pounds each, at 75 cents. Sold T. H. Smiley & Co. 5 barrels sugar, 265 pounds each, at $7\frac{1}{2}$ cents. January 30, James Smith prepaid his note, less the discount. Sold L. M. Hanmett 2 barrels sugar, 265 pounds each, at $7\frac{1}{4}$ cents. March prepaid his sugar note of January 27. Paid clerk salary \$30. (a) Journalize the above. (b) Post in ledger.

Penmanship—Weight .5.

This subject will be marked on the entire written examination of the applicant.

Practical Questions—Weight 4.5.

1. How would you inspect the following? State in each case what defects would lead you to reject them: Lard, canned corn, mutton, flour, coffee, towels, onions, oatmeal.
2. Write a report to the General Storekeeper, showing that you have received more perishable goods than you can properly store before they will be used. This report must include five kinds of perishable goods, the amounts previously on hand, the amounts just received, what will probably be used in time to avoid spoiling and the excess that you cannot handle.
3. What would be your method of storing the following: Kerosene, eggs, soap, fresh tomatoes, buckwheat, hoes.
4. If you had received the following bill with a consignment of goods, what would you do with it: Five barrels flour at \$7.24, \$35.40; 4 barrels granulated sugar at \$12, \$50; 184 pounds coffee at 22 cents, \$39.48; 134 pounds butter at 17 cents, \$22.88; 168 pounds soap at 5 cents, \$7.40—\$144.06.

Spelling—Weight .5.

Write the correct form of each of the following words:
 1, proceedure; 2, extrordinary; 3, comunity; 4, extention;
 5, proprieter; 6, miscelanious; 7, injunction; 8, defalcation;
 9, infringment; 10, promisory; 11, exhorbitant; 12, unscrupulous;
 13, maintenance; 14, remittance; 15, counterfit; 16, necessary;
 17, credentials; 18, inflammable; 19, negotiable; 20, surety.

STOREKEEPER, ANY DEPARTMENT.

\$1.200 per annum and over, July 9, 1912.

Experience—Weight 2.

(See page 215.)

Arithmetic—Weight 1.

1. The following sales were made in a department store during a certain week. Find totals:

	Shoes	Clothes	Hats	Ribbons	Totals
Monday -----	\$357 75	\$6,578 25	\$375 00	\$156 20	
Tuesday -----	763 25	7,563 70	126 75	75 80	
Wednesday -----	427 50	2,567 20	75 00	275 00	
Thursday -----	125 75	786 80	672 80	86 25	
Friday -----	875 00	1,756 75	325 00	76 75	
Saturday -----	768 25	9,675 50	865 40	95 80	

2. What part of 100 is each of the following: 25, $33\frac{1}{3}$, $87\frac{1}{2}$, $83\frac{1}{3}$, $6\frac{1}{4}$, $16\frac{2}{3}$, $62\frac{1}{2}$? 3. The list price of a consignment of books is \$350. What is the cost price if a discount of 20 per cent and 10 per cent is allowed? 4. A drover bought 375 sheep at \$4.50 per head. He sold 200 of them at a loss of 20 cents a head, and gained enough on the rest to balance the loss. What did he receive per head for the rest? 5. Three thousand two hundred votes are
 21 cs

cast for two men. One has a majority of 374. How many did each man receive? 6. If sugar costs $5\frac{1}{2}$ cents per pound and coffee 33 cents per pound, what is the ratio of the cost of the sugar to that of the coffee? 7. I have a note of \$1,225 due in 48 days. Needing the money immediately I get the note discounted at a bank at 6 per cent. How much will I receive? No grace.

Bookkeeping—Weight 1.5.

James Garrison began business March 1, 1912, with a capital of \$2,500. March 1, bought of D. B. Davis, on account, 200 barrels salt at \$1.25. Bought of A. P. Barnes, for cash, 250 barrels flour at \$7.50. Sold W. H. Sterner, on account, 100 barrels flour at \$8.25. Sold, for cash, 50 barrels salt at \$1.50; 25 barrels flour at \$8.50. March 3, received from W. H. Sterner, on account, \$250. Bought of A. P. Barnes, on account, 200 barrels flour at \$7.25. Sold W. H. Sterner, on account, 10 barrels salt at \$1.75. March 4, bought office safe, \$300, from John Williams and gave my note at 30 days. March 5, bought of P. Armour & Co., 50 barrels lard at \$20 and paid \$300 on account. March 6, paid salaries, bookkeeper, \$15; salesman, \$20; driver, \$12. March 7, prepaid note John Williams for \$300. Inventory: Fifty barrels lard at \$20; 50 barrels salt at \$1.25; 125 barrels flour at \$7.50; 210 barrels flour at \$7.25; office safe, \$300. (a) Given the above business transactions, open and work up a set of double-entry books. (b) Close your ledger and make out a trial balance.

Penmanship—Weight .5.

This subject will be marked on the entire written examination of the applicant.

Practical Questions—Weight 4.5.

1. What precautions would you take in storing the following: Gasoline, blankets, flour, canned corn, oatmeal,

butter, white potatoes, bananas, shoes, chisels? 2. Describe in detail what would be your system of keeping records of goods received, given out, and on hand. It should include at least all the articles mentioned in question 1 above. 3. Specify three grades of the following articles and the approximate market price of each grade of the articles if purchased in the sizes and quantities indicated: Eighty mattresses for single beds; carpet to cover 12 floors, each 10 by 12 feet; 14 bags of coffee; 50 pounds dried beans; 18 carcasses of beef; 324 bushels of potatoes; 650 pounds chicken; 98 barrels flour; 26 cases of soap; 13 dozen sheets for single beds. 4. What examination would you make of the following goods and what defects in them would lead you to refuse to accept the consignment? Butter, canned tomatoes, laundry starch, cured ham, cornmeal, dried fruits, woolen undershirts, shoes, potatoes, eggs. 5. Under present market conditions would you approve of the following bill? If not, what changes would you insist on? Six thousand two hundred and nine bushels shelled corn, \$5,898.55; 907 barrels patent flour, \$4,768.75; 65 smoked Western cured hams, gross weight 625 pounds, \$93.75; 240 Western fresh, solid packed creamery butter, \$50.40; 10 barrels kerosene, \$57; 22 pieces 10/4 muslin, \$308; 1 gross shovels, \$64.80—\$13,879.45. 6. How would you distinguish between good and bad eggs? Give different ways.

Spelling—Weight .5.

1, inadequate; 2, falsification; 3, refrigerating; 4, detection; 5, transportation; 6, fraudulent; 7, unwholesome; 8, demurrage; 9, authoritative; 10, supervision; 11, insolvency; 12, recommendation; 13, emergency; 14, consignment; 15, efficiency; 16, subordinate; 17, glucose; 18, notions; 19, consideration; 20, bituminous.

TYPEWRITER AND CLERK, ANY DEPARTMENT.

Less than \$750 per annum, December 4, 1912.

Arithmetic—Weight 2.

1. The retail price of goods was \$1,650, but the dealer gave a discount of $16\frac{2}{3}$ per cent. and 16 per cent. off; what was the cost of the goods? 2. Find the total cost of 64 pounds at $6\frac{1}{4}$ cents, 48 pounds at $33\frac{1}{3}$ cents; 72 pounds at $16\frac{2}{3}$ cents, 96 pounds at $12\frac{1}{2}$ cents, 60 pounds at $6\frac{1}{4}$ cents. 3. A note of \$680 was given April 8, 1891, due July 23, 1893, with interest payable annually at 6 per cent. No interest having been paid, what was due at settlement? 4. A field is 95 rods long and contains 46 acres and 50 square rods. Find the cost of the fence surrounding it at $\$7\frac{7}{8}$ a rod.

Copying on Typewriter—Weight 4.

Make an exact copy of the following extracts, being careful to observe the same spacing. Put each extract on a separate sheet:

I.

Disease is not a natural condition. It seems to be almost solely the result of the formation of people into groups and their gradually congested form of living. With this congestion and with ignorance prevailing for many generations and centuries as to the nature of disease it is no wonder that habits of slothfulness have formed and the laws of health have been violated flagrantly and continuously by men of all stages of civilization. The task of the health authorities of to-day is to overcome the inertia of these many years, to teach the lesson of individual responsibility while setting up officially created safeguards.

No longer do people consider the subject of hygiene one to be relegated to the specialists and scientists. They are taking an intelligent interest in matters of food purity, in

the protection of water supplies from pollution, in the destruction of noxious insects that carry disease. In the establishment of higher sanitary standards in place of dense living, in the maintenance of protective measures among children in schools, in the spread of information to arouse the ignorant from their disregard of health laws. All of these features were strongly emphasized and illustrated at the Fifteenth International Congress of Hygiene and Demography which met at Washington, D. C., during the week beginning on September 23—the first of these congresses to be held in America.

II.

Computation of Maj. Fred Brackett, Based on 149,333 Clerks and Employees Classified and Unclassified, showing result of 3 Per Cent. Assessment on Salaries.

(One-twelfth (1/12) deduction from annual salaries in all cases of original appointments for first year, 25 per cent. deduction for one year from increase of salary in all cases of promotion.)

	Annual cost	Available	Annual balance	Interest	Assessment and collections
1906-----	\$1,124,500	\$5,072,829	\$3,947,829	\$118,440	\$5,072,829
1907-----	1,362,500	9,138,598	7,776,098	228,288	5,072,829
1908-----	1,639,000	13,081,710	11,442,710	348,281	5,072,829
1909-----	1,960,500	16,868,320	14,897,820	446,965	5,072,829
1910-----	2,326,000	20,417,064	18,091,064	542,783	5,072,829
1911-----	2,766,500	23,706,146	20,939,646	628,189	5,072,829
1912-----	3,246,500	20,640,164	23,393,664	701,810	5,072,829
1913-----	3,713,000	29,167,808	25,454,808	763,644	5,072,829
1914-----	4,246,500	31,290,776	27,044,276	811,828	5,072,829
1915-----	3,677,500	32,927,983	29,250,433	877,518	5,072,829

III.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY.

Washington, D. C., September 21, 1908.

SIR: I have the honor to submit herewith the manuscript of a revised edition of the Special Report on Diseases of Cattle, in accordance with the following resolution, approved May 23, 1908:

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That there be printed and bound one hundred thousand copies of the Special Report of the Diseases of Cattle, the same to be first revised and brought to date under the supervision of the Secretary of Agriculture, thirty thousand copies for the use of the Senate, sixty thousand copies for the use of the House of Representatives, and ten thousand copies for distribution by the Department of Agriculture.

This work was originally issued in 1892, since which time there has been such a demand for copies that several editions have been printed by order of Congress. It was revised in 1904, and has again been revised in accordance with the resolution above quoted. The changes made in the present edition consist mainly in the revision of the chapters on disease of the digestive organs and infectious diseases and the substitution of a new chapter on animal parasites for the chapter on that subject in the edition of 1904.

While the work is of a popular character, and is intended primarily for the use of the farmer and the stock

owner, it will doubtless also continue to be found useful to the student and the veterinary practitioner.

Very respectfully,

A. D. MELVIN,
Chief of Bureau.

HON. JAMES WILSON,
Secretary of Agriculture.

Letter Writing—Weight 1.5.

Write a letter of about 150 words to Peter Bolger, Secretary of the Civil Service Commission, Philadelphia, on the subject: "General rules concerning the work of clerks that will satisfy both the employers and the employees." Sign the letter "John Doe." In grading this letter the following points will be considered: Form, grammar, style and ideas.

Penmanship—Weight 1.

In grading this subject all the writing on the applicant's examination papers will be considered.

Spelling—Weight 1.5.

Write the correct form of each of the following words: 1, notefication; 2, thermomiter; 3, porportionat; 4, resisistence; 5, accummulate; 6, misselaneus; 7, hydrolic; 8, durebilaty; 9, prelimanery; 10, supavesion; 11, aproxe-maton; 12, effeciancy; 13, culvert; 14, horrezontel; 15, strenthen; 16, evaperashun; 17, perpindiculer; 18, macademise; 19, ressponsability; 20, poreus.

TYPEWRITER AND CLERK, ANY DEPARTMENT.

\$750 to less than \$1,000 per annum, December 4, 1912.

Arithmetic—Weight 2.

1. The retail price of goods was \$1,650, but the dealer gave a discount of $16\frac{2}{3}$ per cent. and 16 per cent off. What was the cost of the goods? 2. Find the total cost of

owner, it will doubtless also continue to be found useful to the student and the veterinary practitioner.

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TYPEWRITER AND CLERK, ANY DEPARTMENT.

\$1,000 to less than \$1,250 per annum, December 4, 1912.

Arithmetic—Weight 2.

1. The retail price of goods was \$1,650, but the dealer gave a discount of $16 \frac{2}{3}$ per cent. and 16 per cent off.

What was the cost of the goods? 2. Find the total cost of 64 pounds at $6\frac{1}{4}$ cents, 48 pounds at $33\frac{1}{3}$ cents, 72 pounds at $16\frac{2}{3}$ cents, 96 pounds at $12\frac{1}{2}$ cents, 60 pounds at $6\frac{1}{4}$ cents. 3. A note of \$680 was given April 8, 1891, due July 23, 1893, with interest payable annually at 6 per cent. No interest having been paid, what was due at settlement? 4. A field is 95 rods long and contains 46 acres and 50 square rods. Find the cost of the fence surrounding it at $\$7\frac{7}{8}$ a rod. 5. A merchant bought 240 barrels flour at \$5.50 per barrel. He sold it at \$6.75 a barrel, taking in payment a ninety-day note, which he forthwith discounted in bank at 6 per cent. What was his actual gain? 6. A. J. Clymer, New York, bought of New England Shoe Company, Boston, Mass., September 18, 1912, 100 cases patent calf, 3,600 pairs, at \$2.50; 80 cases tan calf, 2,880 pairs, at \$2.25; 60 cases kangaroo, 2,160 pairs, at \$2.25; 120 cases French kid, 4,320 pairs, at \$3.50. If discounts of 25 per cent. and $12\frac{1}{2}$ per cent. are allowed on the entire bill, what is the net amount of the bill? Put in form of bill and receipt. 7. A fruit dealer bought 10 dozen oranges for \$2.40. If 2 dozen spoil, at what price per dozen must he sell the good ones to gain $\frac{1}{4}$ of the cost? 8. In a certain town the assessed valuation was \$251,600. To meet the necessary annual expenses \$4,270.60 was required. What must be the tax rate if, in addition to property tax, there were 140 polls at \$1.75 each? What is A's tax on his property valued at \$975?

Copying on Typewriter—Weight 4.

Make an exact copy of the following extracts, being careful to observe the same spacing. Put each extract on a separate sheet:

I.

Disease is not a natural condition. It seems to be almost solely the result of the formation of people into

groups and their gradually congested form of living. With this congestion and with ignorance prevailing for many generations and centuries as to the nature of disease it is no wonder that habits of slothfulness have formed and the laws of health have been violated flagrantly and continuously by men of all stages of civilization. The task of the health authorities of to-day is to overcome the inertia of these many years, to teach the lesson of individual responsibility while setting up officially created safeguards.

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Spelling—Weight 1.5.

Write the correct form of each of the following words: 1, Notefication; 2, thermomiter; 3, porportinat; 4, resisistence; 5, accumulate; 6, misselaneous; 7, hydrolic; 8, durebilty; 9, prelimanery; 10, supavesion; 11, aproxe-

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TELEPHONE OPERATOR, ANY DEPARTMENT.

\$480 to \$900 per annum, September 27, 1912.

Experience and Personal Fitness—Weight 3.

(See page 215 for experience.)

Personal Fitness (Oral) — 1. What is your age? Married?..... Children?..... 2. To what extent do you use liquor or cigarettes? 3. Have you ever been arrested? 4. Sanitary condition of person. 5. Physical fitness.

Copying on Typewriter—Weight 2.

Make an exact copy of the following:

CORPORATION TAXES.

Summary of corporation tax receipts for the past year:

Insurance premiums	\$564,447 46
Transportation earnings	899,778 99
Transportation, capital stock	773,440 96
Telegraph and Telephone, earnings	132,192 38
Telegraph and Telephone, capital stock	221,440 85
Miscellaneous, capital stock	730,004 32
Gas, water, electric light, etc., earnings	463,340 27
Foreign banks	32,435 12
License fees	37,719 21
Trust companies	1,981,817 25
Savings banks	787,691 03
	\$5,624,315 84

In so far as Article IX, Chapter 24, of the general laws, familiarly known as the "Corporation Tax Law," relates to the taxation of gross earnings of railroads, gas, electric, heating, lighting, power and water companies; to the taxation of the premium of insurance corporations; the capital,

surplus and undivided profits of trust companies; the surplus and undivided profits of banks, and the net receipts of foreign bankers, no more desirable or readily administered law could be had. There seems to be an almost hopeless entanglement, however, with relation to the construction to be placed on Section 182 of the law which applies only to the taxation of capital stock. The decisions of the courts relating to the determination of the basis of assessment under Section 182 seem to be very conflicting.

Penmanship—Weight 1.

Penmanship will be marked on the entire written examination of the applicant.

Practical Questions—Weight 3.

1. What is a transmitter? What is a receiver? 2. Describe a telephone switchboard, such as would be used in a branch exchange in a business office or a department office in a government building. 3. Tell in detail the routine of an operator from the time a call is made until the person who called has finished. 4. Name three important qualifications a telephone operator should possess and state why you think each one is important. 5. If the Director of a Department was very busy and left word he was not to be disturbed, what would you do if some one called and insisted upon seeing him? Would you interrupt him in any case? 6. If it was your duty to answer inquiries from visitors to the office what would be your general attitude toward them?

Spelling—Weight 1.

Write the correct form of each of the following words: 1, cheif; 2, ofical; 3, mesage; 4, circut; 5, subscribor; 6, ordinery; 7, disconect; 8, receive; 9, switshboard; 10, arange; 11, difficulty; 12, electriccal; 13, signal; 14, vareous; 15, allarm; 16, buisness; 17, capable; 18 posesion; 19, ability; 20, discribe.

WRIT SERVER, LAW DEPARTMENT.**\$1,000 per annum, June 7, 1912.*****Apparent Personal Fitness—Weight 1.5.******Arithmetic—Weight .5.***

1. The population of ten cities is as follows: 275,685; 97,543; 68,762; 927,689; 54,698; 375,424; 68,456; 83,769; 68,592 and 125,675. What is their total population? 2. The average value of 25 properties is \$2,597. What is their total value? 3. In 275 days a writ server has served 5,225 subpœnas. What was the average number a day? 4. Subtract $\frac{7}{8}$ from the sum of $\frac{1}{4}$, $\frac{1}{3}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{6}$. 5. A writ server serves 75 out of 90 writs. What percentage remained unserved?

Penmanship—Weight 1.

This subject will be marked on the writing in the plain copy.

Plain Copy—Weight 1.

Make an exact copy of the following:

In *Commonwealth vs. Henry Quigg*, an appeal was taken from the decree of the Court of Quarter Sessions of this county on March 13, 1910, to the Superior Court, as of October Term, 1910, No. 56. In this case an order had been made upon the defendant, Henry Quigg, by the Court of Quarter Sessions of this county on June 21, 1905, directing the defendant to pay the sum of one dollar per week to the City of Philadelphia, to reimburse it for the amount it was paying for the support of his wife, Mary Quigg, who was an inmate of the State Hospital for the Insane at Norristown, and there supported as a charge on the City of Philadelphia.

Practical Questions—Weight 5.

1. (a) You are given a subpœna to serve on John Jones and find him at the address given; how do you serve it on

him? (b) How would you serve it on Mary Jones, his wife? (c) Suppose one of the witnesses named in the subpoena was a boy fifteen years old, how would you serve it on him? 2. How would you serve a subpoena on an officer of a corporation? 3. Do you leave the subpoena with the witness? 4. Suppose while serving the subpoena on John Jones he demands payment of his witness fee and mileage. What would you do? 5. How would you serve a subpoena given to you after 12 o'clock noon on Saturday for a witness to appear in court at 10 A.M. the following Monday morning? 6. You are given a subpoena to serve on John Smith to appear in court at Philadelphia and learn that he lives in Reading. Could you serve him there? 7. Suppose in attempting to serve a man with a subpoena he or some one at his direction should attempt to assault you. What would you do? 8. Suppose the person to be served with the subpoena refuses to admit you into his house or office, would you have the right to force an entrance to serve him? 9. (a) Suppose the City has filed a bill in equity against the X corporation, and you are given a copy of the bill in equity to serve on the proper officer of the company without being given the name or address of any one of the officers. What would you do and on what officer would you serve it? (b) In making your report of service what facts would you state? 10. Suppose one of the witnesses is a police officer of the City of Philadelphia. How would you serve a subpoena on him?

Spelling—Weight 1.

1, Answer; 2, plaintiff; 3, defendant; 4, complainant; 5, respondent; 6, attorney; 7, solicitor; 8, authority; 9, appearance; 10, prothonotary; 11, personally; 12, residence; 13, business; 14, pier; 15, affidavit; 16, refusal; 17, libellant; 18, wharves; 19, bulkheads; 20, qualifications.

ENGINEERING SERVICE CIVIL, ELECTRICAL, MECHANICAL

APPRENTICE,
DEPARTMENT OF PUBLIC WORKS, BUREAU OF SURVEYS.
\$360 per annum, October 9, 1912.

Experience—Weight 2.*

1. Give the names of two reputable citizens who will vouch for the truth of your answers on this paper. 2. What is your age? 3. (a) Give the name and location of the schools you have attended, the length of time spent in each, and the course pursued. (b) What technical course have you pursued? Or what apprenticeship have you served? 4. (a) What practical experience have you had since leaving school? Explain fully, stating where you have been employed; the names of your employers; the length of time employed in each; the salary received and the nature of the work you did. (b) Has your experience been continuous? How many years of office work and how many years of field work have you had? 5. From what position have you been discharged? 6. State any other experience or training you have had that would tend to fit you for the position which you are now seeking.

Personal and Physical Fitness—Weight 3.

1. What is your age? Married? Children? 2. To what extent do you use liquor or cigarettes? 3. Have you ever been arrested? 4. Sanitary condition of person. 5. Physical fitness.

Arithmetic—Weight 3.

1. Find the product of $22/8 \times 316/4 \times 7/11 \times 69/21 \times 11/23$. 2. Add 4 feet $6\frac{1}{8}$ inches, 5 feet $4\frac{3}{4}$ inches, 3

*These same questions on experience were used for all examinations in this service that included an experience test.

feet $5 \frac{1}{16}$ inches, 7 feet $9\frac{3}{8}$ inches. 3. Express in decimals: (a) Three hundred and twenty-five thousandths, (b) twenty and eight hundred and ninety-seven ten thousandths, (c) sixty-three ten millionths. 4. Find the area and circumference of a circle whose radius is ten feet. 5. The base of a right triangle is 51 feet, the hypotenuse is 85 feet, find the area. 6. Divide 37,179 by 0.0729. 7. How many cubic feet will a box hold if its inside dimensions are 12 inches by 18 inches by 9 inches? 8. How many feet in a rod? mile? How many square feet are in an acre?

Penmanship—Weight 1.

This subject will be graded on the whole examination.

Spelling—Weight 1.

Write the correct form of each of the following: 1, surveyer; 2, perpendicular; 7, accute; 4, aveneu; 5, reguler; 6, practical; 7, possition; 8, levle; 9, cylinder; 10, privelige; 11, horizontle; 12, asisstant; 13, princepal; 14, verticle; 15, triangel; 16, inspector; 17, devide; 18, preparation; 19, specified; 20, foreman.

ASSISTANT TO GENERAL SUPERINTENDENT,
DEPARTMENT OF PUBLIC WORKS, BUREAU OF WATER.
\$1,500 per annum, July 16, 1912.

Experience—Weight 2.

(See page 342.)

Practical Questions—Weight 3.

1. Describe in general the duties of an assistant to the General Superintendent. 2. What records would you expect to keep of your work at the various filter plants and pumping stations? 3. How does the consumption of water in Philadelphia vary according to months and how would

this variation be provided for? 4. What should be the relative cost of the following items of annual expenses in a pumping station? Repairs to engines (materials and wages), repairs to boilers (materials and wages), wages of employees, coal, oil? 5. What rules would you suggest for the conduct of the employees? 6. What are the qualifications of a good oiler? How would you supervise his work? 7. What are the qualifications of a good fireman? How would you supervise his work? 8. What daily reports should each employee of a pumping station make? 9. If in a certain pumping station you found that the coal cost per 1,000,000 gallons raised 100 feet high had suddenly risen 10 per cent. above normal, how would you determine the cause and what action would you take? 10. Describe the difference between water tube, return tubular, and internally fired boilers, stating their relative efficiency and freedom of danger from explosion. 11. Describe the various differences between simple and compound engines as to their relative efficiency and economy in operation. 12. Make a rough sketch, locating the principal parts of a pumping plant of 2,000,000 gallons daily capacity, showing source of water supply, coal bins, boiler, pump, reservoir and connections.

PRINCIPAL ASSISTANT,
DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.
\$1,800 per annum, July 22, 1912.

Experience—Weight 2.

(See page 342.)

Ability to Prepare Plans—Weight 4.

1. Show the cross sections for three different paving materials, the street to be 50 feet wide. 2. What are the customary widths of cartways and sidewalks for streets 40 feet, 60 feet and 100 feet wide? 3. It is required to drain a certain section of the City. Give your method for

determining the size of the necessary sewer. 4. How would you furnish grade-stakes for a sewer? 5. Give a sketch of a preliminary plan for constructing a branch sewer. 6. What information is shown on a contract drawing for a section of sewer? 7. Describe fully a city plan, including all information to be shown thereon.

Knowledge of Assessments—Weight 1.

1. Describe briefly and in order the steps of procedure for assessment of a street paving operation of two blocks on a city street. 2. Upon what classes of improvements are abutting owners assessed by the City? Name any two examples, with corresponding rates.

Surveying—Weight 3.

1. Give a complete outline of your course of procedure if you were assigned to make a precise survey for the purpose of bridging the Schuylkill river, no city records being available. Describe fully your methods in such a survey. 2. In a quadrilateral ABCD: AB 712,856; BC 349,814; AD 318,620, angle ABC $58^{\circ} 17' 40''$; angle BAD $60^{\circ} 29' 37''$. Compute the side CD to nearest one-thousandth, and all the angles to the nearest second.

CHAINMAN, ANY DEPARTMENT.

\$40 and \$60 per month and as per Ordinance,
February 26, 1912.

Experience—Weight 1.

(See page 342.)

Arithmetic—Weight 4.

1. Add: 2,968; 546; 8,495; 459; 35; 896; 4,624; 879; 48; 271; 3,859. 2. A field is 56 rods wide and contains 25 acres 88 square rods. Find the cost of fencing it at 66 $\frac{2}{3}$ cents a square yard. 3. A building is 85.64 feet

long, 51.28 feet wide, and 31.5 feet high to the eaves. What is the cost of painting the outside walls at 34 cents a square yard? 4. Extract the square root of $25.0\frac{3}{4}$ correct to 4 decimals. 5. Four men working eight hours each can shovel 128 cubic yards of earth. How many cubic yards of earth can 8 men shovel if they work 12 hours each at the same rate? 6. Find the circumference of a circle whose radius is 15 feet 6 inches. 7. Compute the area of the circle in question 6.

Practical Questions—Weight 5.

1. If a chain or tape be out of level in measuring, will it measure too long or too short? 2. If in comparing a chain you find it short, how would this affect the work done with it in this condition? 3. What would you do if your supply of stakes ran out? 4. If the city buys a lot and an old chain which had not been tested is used to survey the ground, would the city pay more or less? 5. If two competent chainmen chain over a mile twice with an ordinary steel tape, how close should the results come? 6. What is meant by "breaking a chain"? 7. How can you tell when a tape is horizontal? 8. What is a "B. M."? 9. Assume that the engineer sent you to the office to bring everything necessary for a transit survey, what would you bring? 10. How would you clean a rusty tape?

CHAINMAN, ANY DEPARTMENT.

\$40 to \$60 per month, December 11, 1912.

Experience—Weight 2.

(See page 342.)

Arithmetic—Weight 4.

1. Find the product of $12.186 \times 496.07 \times 108.0304$.
2. A cellar was excavated 25 feet 6 inches wide in front, 28 feet 9 inches wide in the rear, 116.27 feet in length,

and one yard and a half in depth. How many cubic yards of earth were removed? 3. The base of a right triangle is 172 feet, the hyothenuse is 215 feet. What is the area of the triangle? 4. Find the product of $11\frac{3}{4}$, $16\frac{7}{8}$, $18\frac{1}{9}$ and $14\frac{5}{6}$. 5. Find the area of a circle whose diameter is 10 feet 6 inches.

Practical Questions—Weight 4.

1. What is (a) a "steel tape"? (b) a "metallic tape"? (c) a "surveyor's chain"? 2. What implements or instruments does a chainman use in his work? 3. What are the principal causes of error in chaining? How may these errors be avoided? 4. How may two chainmen keep on line if both ends of the line are visible at all intermediate points? 5. What is meant by "breaking a chain"? When is it used and for what purpose is it used? 6. How are measurements taken on rough or hilly ground? 7. If a chain is longer than the United States standard how does the measured length of a line compare with the true length? 8. What corrections have to be made in computing the true length of a line? 9. How may a 90-degree offset be made with a tape? 10. How do you clean a rusty tape?

ASSISTANT CHIEF,
DEPARTMENT OF PUBLIC WORKS, BUREAU OF HIGHWAYS.
\$3,000 per annum, July 31, 1912.

Experience—Weight 2.

Any false statement made by the applicant in answering these questions will be regarded as good cause for excluding him from the eligible list, or for removal or discharge during probation or thereafter.

1. What is your age?
2. (a) In what grade were you when you left the Grammar School?

- (b) What High School did you attend? How long? What course?
- (c) What technical training have you had as apprentice, or in business school, or in college, or in technical school?
- 3. In general, what is your occupation? How long have you followed it?
- 4. When, where, for whom, and how long have you worked at this occupation, and what wages or salaries have you received in each case?
- 5. From what positions have you been discharged for cause, and what were the causes?
- 6. State exactly and in detail the kind of work you were doing in each of the leading positions you have filled in the past five years.
- 7. What experience have you had in street cleaning and ash and garbage collection, and the final disposal of the material so collected?

Paper—Weight 3.

Discuss the City waste problem, setting forth the advantages and disadvantages of the present plan in Philadelphia, outlining possible improvements as shown in the experience of other cities or from your own views, and pointing out the most modern way of treating the problem with reference to methods, apparatus, plants, revenue, etc. A maximum of two hours will be allowed for this paper.

Practical Questions—Weight 5.

1. What are the relative advantages and disadvantages of having the streets cleaned by contract, and by the municipality itself?
2. Assuming such facts as you wish, show a method of calculating the cost of a year's cleaning per block in a residence section.
3. Select three large cities which have, in your judgment, the best cleaned

streets and outline briefly the methods in use. 4. In order that the Director may know at all times by daily reports the exact condition of the streets and alleys in every part of the City, also conditions of dumps and plants for final disposal, how many inspectors do you think will be required? 5. What class of men would you pick for these positions and what would be your plan of organization? 6. Do you think the City should be divided into districts for the proper organization of the work? If so how many districts? Give outline of each district. 7. Granted that the waste material collected shall be divided into three general classes, viz., combustible, non-combustible and food waste (commonly called garbage), what do you think is the best plan for the final disposal of the three classes of material?

CIVIL ENGINEER,

DEPARTMENT OF PUBLIC WORKS, BUREAU OF SURVEYS.

\$1,500 to \$1,800 per annum, September 7, 1912.

Experience—Weight 2.

(See page 342.)

Mathematics—Weight 3.

1. From the point of tangency of two circles of radius 600 feet and 400 feet, respectively, arcs 615 feet long are measured on each circle. Find the length of the line joining the extremities of these arcs. 2. (a) What will 100 pieces, 16 feet long, of 4-inch by 10-inch sheeting cost, at \$45 per thousand feet b.m.? (b) A steel tape is 100.000 feet long at 62 degrees Fahrenheit, with a pull of 12 pounds, and supported its entire length. A line was measured and found to be 428.01 feet when the temperature was 10 degrees above zero, other conditions standard. Coefficient for 1 degree Fahrenheit is

0.0000063. What is the true length of the line? 3. The formula for theoretic discharge through a triangular orifice is $q = 1/15 \sqrt{2g} (b/d [4(h+d)^{5/2} - (4h + 10d)h^{3/2}])$ in which b is a horizontal base, d the altitude, h the head of water on the base, and $h + d$ the head of water on the vertex. Assuming $b = 2.0$ feet; $d = 1.0$ foot; $h = 4.0$ feet; compute the discharge. 4. Given the abscissas of the several corners of a field L. M. N. O. P., respectively, 100, 75, 150, 250, 225, and the corresponding ordinates, 100, 200, 275, 250 and 100, all in feet, determine the area.

Technical and Practical Questions—Weight 5.

1. Describe in detail and illustrate by sketches: (a) Two methods of running survey lines and making measurements when obstacles are encountered. (b) Three methods of measuring a line, where direct measurement is impractical. 2. Describe in detail the process of measuring a base-line for a primary triangulation. 3. (a) Describe the process of producing a straight line forward from a back-sight when the line of collimation of the telescope is not in perfect adjustment. (b) Describe how you would set a transit on line if you could see, but could not set up on either end of the line. Transit is to be between the ends. 4. Two tangents intersect at an angle of 58 degrees 30 minutes. It is required to put in a circular curve of radius 600 feet joining the tangents, the point of curve to be Sta 12 + 87.89. Find the tangent distance and the deflections from the tangent for each even hundred foot station to the end of curve. Give results in tabular form. 5. Describe in detail your method of laying out on the ground the curve in question 4. 6. What would be the cost of building a concrete wall, 2 feet 6 inches wide at the top, front and rear faces have a batter of 1:12, the wall is 12 feet high and 100 feet long, with vertical ends. The footing is in place and

paid for. Forms are to cost 20 cents per square foot of exposed surface, not including the top surface of the wall. Engineering and superintendence to cost 10 per cent. of the cost of forms and concrete. Concrete to cost \$9 per cubic yard in the forms. 7. (a) What are the customary tests for cement? (b) How is the tensile strength of a specimen of cement determined? 8. A section of road-bed is to be graded from station 53 + 00 to station 56 + 00. Width of road-bed, 60 feet. Where fill occurs the slope is to be $1\frac{1}{2}$ horizontal to 1 vertical; in cut, the sides are to be vertical. The finished grade of road-bed is + 2 per cent. The original surface and the finished surface have the same elevation at station 53 + 00—elevation 120.00. The original surface elevations are as follows: Station 53 + 00—elevation 120.00; station 54 + 10—elevation 126.00; station 54 + 10—elevation 126.60; station 55 + 00—elevation 123.00; station 56 + 00—elevation 126.00. The grade of O. S. is uniform between the stations given. Calculate the number of cubic yards of cut and fill, by method of average and areas for each 20-foot station. Arrange work in tabular form. Compute all end areas to the nearest one-hundredth. 9. Name and describe five different kinds of piles used in construction work. 10. A floor which is to sustain a uniform load of 175 pounds per square foot is to be supported by heavy 10-inch I-beams of 15-foot span. Beams have a section modulus $I/c = 31.8$ inches. Find the proper distance apart in inches from centre to centre, so that the maximum fibre stress may be 12,000 pounds per square inch. (Uniform loading includes weight of beam.) 11. A retaining wall 2 feet wide on top has three offsets, or steps, each 2 feet wide and $4\frac{1}{2}$ -feet rise. The batter of the face is 1 : 12. The total height of wall from bottom of footing to top of wall is 21 feet. The footing is 3 feet deep and extends

1 foot out from toe of batter in front, and 1 foot out from the face of the bottom step in the rear. The concrete in the wall weighs 140 pounds per cubic foot. A horizontal thrust of 3,000 pounds acts on the rear of the wall at a point $\frac{1}{3}$ the distance from the bottom of footing to top of wall. Determine if the wall is in equilibrium.

ASSISTANT COMMISSIONER,
DEPARTMENT PUBLIC WORKS, BUREAU OF HIGHWAYS.
\$2,500 per annum, February 23, 1912.

Experience—Weight 2.5.

1. With respect to both your general and technical or professional education, state fully and in detail the names and locations of the schools or colleges you have attended and the courses of study pursued by you in each, naming any degree or degrees received by you and the institutions by which conferred. Give date of graduation. If you have pursued any post-graduate courses of study, state fully what studies and when, where and for what length of time they were pursued. 2. What experience have you had as a municipal engineer or in road construction work? State the time you have so worked, and when, where and under whom you so worked (giving dates and places.) 3. State fully and in detail all the practical experience you have had in the occupation in which you seek employment, or in professions or occupations of a similar character. State (a) when, giving dates; (b) where; (c) by whom you were employed; (d) the salary or compensation received; (e) the specific nature of your duties in each case. If possible, the names and post-office addresses of not more than five officers, firms, or corporations, under whom or for whom you have worked, should be given. If there are any branches of a profession or occupation in which you regard yourself as especially expert, state what

branches. 4. State what other employments or occupations you have pursued, or positions you have held, and indicate the nature of the duties performed by you in each case. State when (giving dates), where, how long, and under whom you were employed. 5. If not fully covered in answers to questions 3 and 4, state fully what has been your business or occupation for each of the past five years, including a statement in detail as to your present employment. If you are now unemployed, state how long you have been so. 6. State any additional facts which may tend to show your fitness for the position for which you have applied.

Practical Questions—Weight 6.

1. There are six principal forms of street pavement. State them in their proper order in relation to (a) first cost, (b) yearly maintenance cost, (c) probable life, (d) resistance to traction, (e) sanitary qualities. 2. It is proposed to repave Fifteenth street, from Chestnut to Market streets. What form of pavement would you suggest, and why? If the roadway of this square is 26 feet wide and 430 feet long, how much should the suggested pavement cost? 3. Describe in detail the preparation of the sub-grade for a pavement on a city street. If across this sub-grade ran a recently and loosely filled trench, what procedure would you require at this point? 4. What is hydraulic cement concrete? What proportions of materials are used in pavement foundations in this City? Could this mixture be improved, and why? Write a specification for sand to be used in concrete. What makes the better aggregate—gravel or broken stone? Why? 5. Describe very fully what you consider to be the best practical method of mixing concrete by hand, showing diagrams of the mixing platform, with the positions of the various materials upon it at each stage of the mixing.

6. An intersection of two streets is to be paved, including the returns to the building lines. One street is 60 feet wide, with 15-foot sidewalks; the other is 50 feet wide, with 12-foot sidewalks. The concrete foundation is to be 6 inches thick. How many cubic yards of concrete will be required? If the curbs are rounded at the corners on an 8-foot radius, how many additional yards will be required? 7. Describe in detail the laying of the two upper courses of a sheet asphalt pavement. What details require the most careful inspection? What are the characteristic differences between Trinidad and Bermudez asphalt? 8. What is the average size of a paving brick? What tests are commonly specified for paving brick? What do you consider the best filler for a brick pavement, and how is it applied? How many bricks should be required in paving a roadway 28 feet wide and 325 feet long? 9. Describe the mixing and penetration methods of preparing bituminous macadam roads. 10. A street has a 10 per cent. grade. What does that mean? The street leads to a passenger railroad station, and the traffic consists only of carriages and automobiles. What type of pavement would you recommend and why? 11. Write a specification for laying wood blocks, including clauses covering filler, expansion joints and cushion. Discuss the chemistry of the various materials used in treating wood blocks. 12. What is meant by a traffic census? Describe in detail the method you would employ in securing a traffic census of (a) a city street, and of (b) a suburban road. 13. State concisely the details which should be covered by cost data in records regarding the construction and maintenance of a bituminous macadam pavement. 14. Describe by diagram an ideal organization for the highway bureau of a city of 2,000,000 inhabitants; this bureau having charge of the construction and maintenance.

nance of streets, the cleaning of streets and the disposal of wastes.

Report Writing—Weight 1.5.

As Assistant Commissioner of Highways, write a detailed and formal report to the Chief of the Bureau, suggesting improvements to be made in existing methods of removing ashes. Do not sign your name; use your examination number instead.

DRAFTSMAN, ANY DEPARTMENT.

\$600—\$900 per annum, or about 41 cents an hour,

October 5, 1912.

Experience—Weight 2.

(See page 342.)

Mathematics—Weight 3.

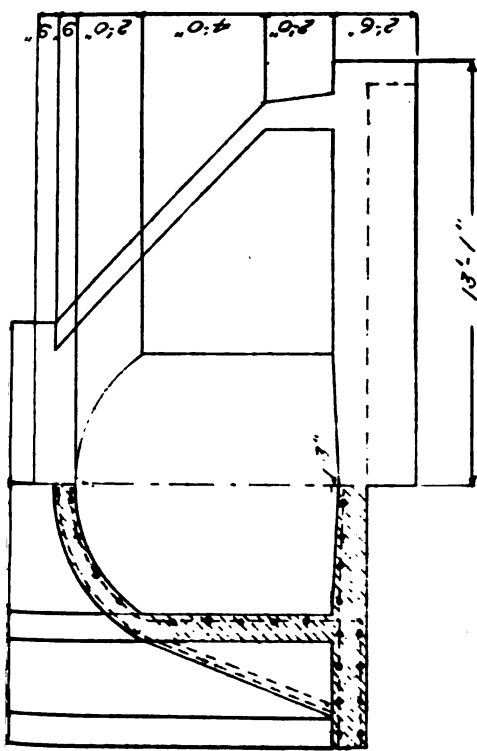
1. The internal diameter of a concrete tank is 30 feet 6 inches, the external diameter is 33 feet; the floor is 2 feet 6 inches thick; the elevation of the bottom of the floor is 109.62 feet; the elevation of the top of the tank is 127.87 feet. What will be the weight of the tank, assuming concrete as weighing 140 pounds per cubic foot? 2. Given the diameter of a circle as 72 feet, what is the area of the inscribed hexagon? 3. A circular arc is subtended by an angle 60 degrees at the center of a unit circle. What are the numerical values of the six trigonometric functions? 4. Extract the square root of 573,029.318190 to four places of decimals. 5. Add 24 feet $5\frac{7}{8}$ inches, 12 feet and $\frac{1}{4}$ inch, 14 feet and $1\frac{3}{4}$ inches, 19 feet $7\frac{3}{4}$ inches, 18 feet $5\frac{1}{8}$ inches, and reduce the total to feet and hundredths of a foot.

Practical Questions—Weight 5.

1. Describe two methods of laying off an angle on paper; tell which of the two methods is the better, and

23 cs

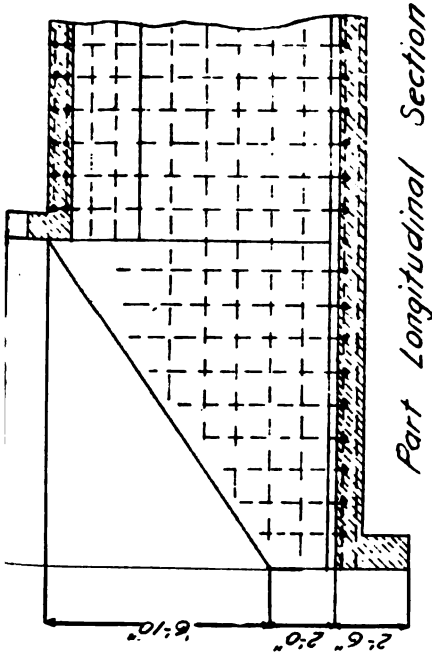
why? 2. Describe and illustrate by a sketch the graphical method of dividing a line into five equal parts. 3. What is the method of stretching drawing paper preparatory to using colors? How should colors be applied to a drawing? How should colors be applied to a tracing? 4. Show four ways of expressing the scale for a map. 5. In an arch, define and illustrate by sketch: (a) the rise; (b) span; (c) springing line; (d) crown. 6. What are the conventional signs used on drawings to represent; (a) wood; (b) brick; (c) concrete; (d) freshwater marsh; (e) grass. 7. A wall is 100 feet long, 2 feet 6 inches wide on top, 18 feet 3 inches high, the batter on the front and rear faces is 1:12. What would be the cost of the wall if the material cost \$9.75 per cubic yard? 8. A box is 4 feet 6 inches long, 3 feet wide and 1 foot 6 inches deep, outside measurements. The material of the box is 2 inches thick. Show a plan view, front elevation, end elevation, and a sectional view of the box. 9. (a) Print the following in small type (not capitals): Note: The datum plane used for contours and soundings on this map is "Philadelphia City Base." Soundings and contours confirmed and extended by data from map (D 123456789) on file with Department of Wharves, Docks and Ferries. (b) Make a finished title of the following: COMMONWEALTH OF MASSACHUSETTS—METROPOLITAN WATER WORKS—WACHUSETT DAM—UPPER GATE-CHAMBER—July 9, 1900.



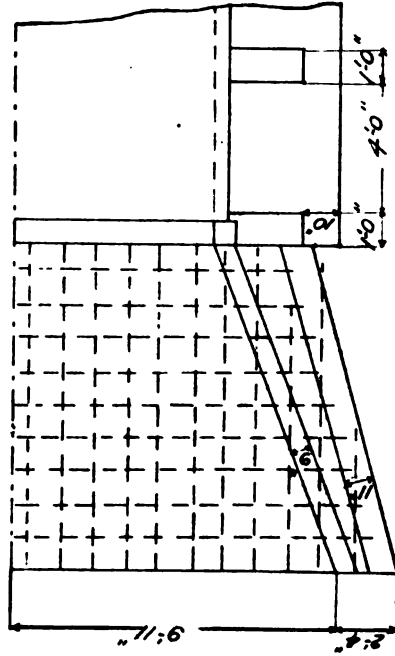
Section End Elevation

All reinforcement $\frac{3}{4}$ " diam. rods, 1'-0" c.c. to c.c. and imbedded 1'- $\frac{1}{2}$ ".

REINFORCED CONCRETE ARCH CULVERT Scale $\frac{1}{4}$ " = 1'-0"



Part Longitudinal Section



Part Plan

See Practical Questions, No. 6, page 358.

DRAFTSMAN, ANY DEPARTMENT.

\$600 to \$900 per annum, December 11, 1912.

Experience—Weight 2.

(See page 342.)

Practical Questions—Weight 5.

1. Give two methods of plotting traverse lines and illustrate. 2. Given all data necessary to plot a profile, how would you proceed? 3. Show (with a sketch) how you would construct a circle through three given points not in the same line. 4. Show (with a sketch) how you would construct a circle tangent to two intersecting lines and through a given point in one of the lines. 5. What is the difference between an isometric projection and an orthographic projection? Illustrate. 6. Make a finished copy in ink and at a scale of one-half inch to the foot of the attached drawing. Note.—Drawing and lettering on question "6" will count one-half on the subject of Practical Questions.

Mathematics—Weight 3.

1. In a circle with a radius of 52 feet, find the area of a sector with an arc of 25 degrees. 2. One side of a regular hexagon is 38 feet. Find the area in acres and decimals of an acre. 3. If a is the side of an equilateral triangle; show that its area is $\frac{a\sqrt{3}}{4}$. 4. A tower 95.6 feet high is situated on the edge of a river. The angle of depression of an object on the opposite side is 30 degrees. Find the breadth of the river. 5. Given $\log 2 = 0.30103$; $\log 3 = 0.47712$; $\log 7 = 0.84510$. Find the values of the following: $\log 6$, $\log 12$, $\log 7/2$, $\log 10/9$. 6. Give the six trigonometric functions of an angle of 45 degrees.

DRAFTSMAN,

DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.

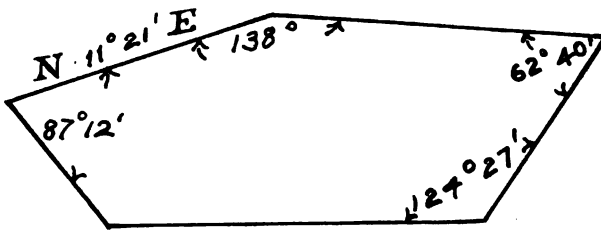
\$900 per annum, March 6, 1912.

Experience—Weight 2.

(See page 342.)

Technical Knowledge—Weight 8.

1. (a) What information should be shown upon a City plan? (b) What is a profile? (c) Define a contour line. (d) What is meant by City datum? 2. What is the area, in square miles, of a map 6 feet square, drawn to a scale of 1/19200. 3. Determine the missing angle and the magnetic bearing of each side in the following figure:



4. A topographical map drawn to a scale of 100 feet to one inch is to be reduced to a scale of 200 feet to 1 inch. Describe method you would use. 5. Lay out the following title for a plan, using free-hand lettering: "Plan of the revision of lines and grades and establishing streets on City Plan Number 238, 47th Ward, Philadelphia." Scale 1 inch = 100 feet. 6. What methods and instruments are used in the field in making a topographical survey? 7. Illustrate by sketch how you would designate upon a plan the following: Railroad, turnpike road, quarry, marsh, river bank, mud flats, woods, ploughed field and property lines. 8. (a) What are the primary colors? Describe what combinations of these will secure at least three secondary colors. (b) Describe the colors

you would use in preparing a plan of a large farm property with its topographical features. 9. Describe a vernier. Describe a protractor and give its uses. 10. A property drawn on a scale of 200 feet to an inch contains 1,200 square inches. What is its area in acres?

DRAFTSMAN,

DEPARTMENT PUBLIC WORKS, BUREAU OF HIGHWAYS.

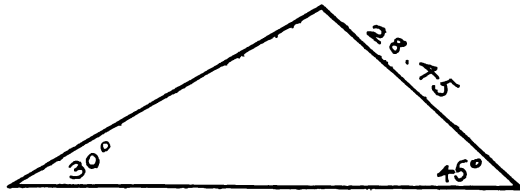
\$950 per annum, March 7, 1912.

Experience—Weight 2.

(See page 342.)

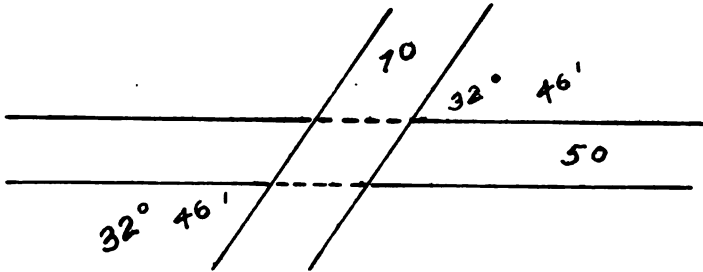
Technical Knowledge—Weight 8.

1. Define plane trigonometry. What is a protractor? What is a vernier? 2. What is a profile? What is a contour line? What information is shown upon a City plan? 3. What is a topographical map and of what practical use is it in surveying? 4. Define simple, compound and reverse curves. Give rule for determining the angles of a triangle when the three sides are given. 5. The area of a circle is five and one-half (5.5) acres; what is the radius in feet? 6. Find the values for the missing angle and sides in the subjoined triangle. Natural sine of 30 degrees is equal to 0.5.



7. Compute the length of the dotted lines and the area of the intersection of two streets, as shown on the subjoined sketch. Natural sine of 32 degrees 46 minutes = .5412191; natural cosine of 32 degrees 46 minutes =

.8408816; natural tangent of 32 degrees 46 minutes =
 .643632; natural ex-secant of 32 degrees 46 minutes =
 .18923.



8. A line seven (7) feet long is met at one of its extremities by a second line forming an angle of 45; what is the radius and area of a circle of which the first is a chord and the second a tangent and what is the area of each segment? 9. A portion of a paved street a block in length is to be platted, showing the underground and surface structures, usually noted by the Board of Highway Supervisors. Sketch your method of keeping notes in the field, and also sketch your method of preparing a record plan of this character. 10. The length of a city block is 524 feet, curb elevation at one end plus 62.8, and at the other end plus 64.7. A summit is established between the two by intersecting grades of 12 inches per 100 feet. What is the elevation of the summit and how far is it from each end?

DRAFTSMAN, ANY DEPARTMENT.

\$900 to less than \$1,200 per annum, July 22, 1912.

Experience—Weight 3.

(See page 342.)

Drawing—Weight 5.

1. Describe clearly and illustrate what is meant by (1) a plan; (2) an elevation, (3) a section. 2. How many

projections of an object are necessary to its complete description? Illustrate and discuss. 3. From the following data execute a finished drawing of the front elevation of a stone arch culvert. Show by a conventional method the granite facing, all stones being rough cut. Width of arch (chord of circle), 12 feet; height of arch, 2 feet 6 inches; height of abutments above ground, 6 feet; number of voussoirs or arch stones, 13. Depth of keystone, 1 foot 6 inches; height of courses determined by springer or end-arch stone; length of headers, 2 feet 6 inches; length of stretchers, 1 foot 3 inches. Wall laid in brick bond. Number of courses between bottom of springer and bottom of coping, 8; height of coping, 9 inches; length of coping stones, 3 feet; projection of coping, 4 inches. Draw to scale $\frac{1}{4}$ inch to 1 foot. The rating of this sheet will be based upon: 1, accuracy; 2, neatness; 3, knowledge of finished draftsmanship.

Trigonometry and Surveying—Weight 2.

1. Draw a right triangle A B C, and name the six ratios of the acute angle A. 2. In measuring the height of a flagpole a surveyor takes the angle of elevation of its top from a point 150 feet from its foot along a level street. He finds the angle to be 36 degrees. How high is the pole? (Natural tangent 36 degrees = .7265). 3. In a field having five sides the angle at A is 100 degrees 40 minutes; at B, 140 degrees; at C 73 degrees 5 minutes; at E 96 degrees 10 minutes. The bearing of C B is N. 41 degrees 10 minutes W. Find the missing angle at D, and the bearing of the sides C D, D E, E A and A B. 4. The sides of a triangle are 40, 50 and 60 feet, respectively. With the formula for area $A = \sqrt{s(s-a)(s-b)(s-c)}$, indicate the process by which, with logarithms, you would obtain the value of A. 5. Two streets intersect at 90 degrees. The sidewalks of each are 14 feet wide. It

is required to place a curved curb at each of the corners, the curb extending to the house-lines. If the radius of the curb is 10 feet, how many feet of curb will be required for the work? 6. What is a profile? A contour line? A bench mark? A topographical survey?

ELECTRICAL DRAFTSMAN,
DEPARTMENT PUBLIC SAFETY, ELECTRICAL BUREAU.
\$1,100 per annum, October 14, 1912.

Experience—Weight 3.

(See page 342.)

Mathematics—Weight 3.

1. What will be the weight of 2,000 feet of bare copper wire whose sectional area is 0.020618 square inches? The weight of one cubic foot of copper is 555 pounds. 2. How many pounds of each constituent will be required to make 90 pounds of German silver whose composition is: Copper, 6 parts; zinc, 2.5 parts; nickel, 1.5 parts? Extract the square root of 803,032.846642 to three places of decimals. 4. Define and illustrate by sketch the six trigonometric functions of an angle. 5. What voltage is required to send a current of twenty-two amperes through a wire having a resistance of five ohms? 6. What will be the cross section, in circular mills, of a wire to transmit 50 amperes over a wire 500 feet long, with a drop of 10 volts in pressure? The resistance of one mil-foot of copper is 10.5 ohms. 7. What is the value of R in the formula:

$$R = \frac{1}{1/7.2 + 1/3.6 + 1/4.8 + 1/2.4}$$

Practical Questions—Weight 4.

1. Name and define four units of electrical measurements. 2. What are the systems of electrical distribu-

tion in common use? What is each used for? 3. Show the switchboard connections for two compound wound dynamos in parallel, with the necessary switches. 4. Draw a neat diagram illustrating alternating current circuits in which a high pressure is distributed from the generator and transformed into a safe pressure at the centers of use, for a three-wire secondary distribution for incandescent lights; a two-wire secondary distribution for incandescent lights; an alternating current arc-lamp and an alternating current motor. 5. Show the connections in a series telephone with hand generator, primary cells, etc. 6. (a) How must constant current series arc-lighting wires be supported? (b) What constitutes a low potential system? (c) What constitutes a high potential system? (d) What constitutes an extra high potential system? 7. (a) In what classes of buildings may transformers be placed? (b) How must transformers be mounted? (c) Where telegraph or telephone wires are run on the same pole with electric light or power wires, where should they be placed?

(Ability to letter and make neat sketches will be considered in marking this paper).

DRAFTSMAN,
DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.

\$1,200 to and including \$1,500 per annum,

July 25, 1912.

Experience—Weight 3.

(See page 342.)

Practical Questions—Weight 7.

1. A line begins at point "A," N. 17.22 E. 15.06, and bears N. 64 degrees 16 minutes E. for a distance of 64.12 feet to a point of curve "B." Thence it curves to

the right with radius 75.00 feet, central angle 45 degrees to a point of reverse curve "D." Thence it curves to the left with a radius of 85.00 feet, central angle 19 degrees 16 minutes to a point of ending, "F." Find the coordinates of the point of curve "B," the centers of the two curves, the point of reverse curve, the point of ending, and the bearings of the limiting radii. Find the length and bearing of the line joining the point of beginning and the point of ending. (Results in all cases to the nearest hundredth.) Derive the equation of the second section of the reverse curve, and reduce the equation. (Neatness of arrangement of the work throughout will be a factor in marking.)

2. A retaining wall 3 feet wide on top has three offsets, each 1 foot 6 inches wide, with 3-foot rise. The batter of the face is 1:12, and the footing extends 1 foot out in front and rear and is 3 feet deep. The total height is 15 feet from bottom of footing to top of wall. The wall is 60 feet long. Make a working drawing showing front elevation, plan and cross section, giving all dimensions. Give particular attention to finished draftsmanship.

3. In the retaining wall in question 2, concrete weighs 140 pounds per cubic foot. A horizontal thrust of 2,000 pounds acts at a point $\frac{1}{3}$ the distance from the base to the top. Determine if the wall is in equilibrium.

4. A branch sewer is to be put in on a street of four blocks, each 400 feet long. The intersected streets are each 50 feet wide, and the lot fronts are each 25 feet. What data would you collect, and what computations would you make in the design of such a branch? How would you determine the total cost? (Only the house sewage is to be considered.)

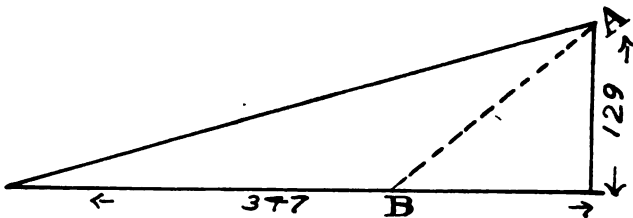
DRAFTSMAN,
DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.
\$1,000 per annum, March 6, 1912.

Experience—Weight 2.

(See page 342.)

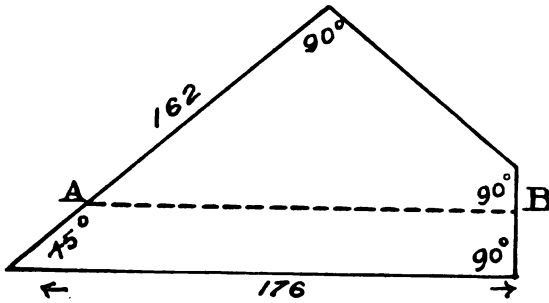
Technical Knowledge—Weight 8.

1. (a) What is a City plan with topography, and what information should be shown upon it? (b) What is a profile? (c) Define a contour line? 2. Draw a circular arc measuring an angle formed by radial lines and designate the sine, co-sine, versed sine, co-versed sine, tangent, co-tangent, secant, co-secant and external secant. 3. A topographical map drawn to a scale of 100 feet to 1 inch is to be reduced to a scale of 200 feet to 1 inch. Describe method you would use. 4. Lay out the following title for a plan, using free-hand in lettering: Plan of the revision of lines and grades and establishing streets on city plan number 238, 47th Ward, Philadelphia. Scale 1 inch = 100 feet. 5. Determine the location and length of the line A — B which will divide the sub-joined figures into two exactly equal areas:

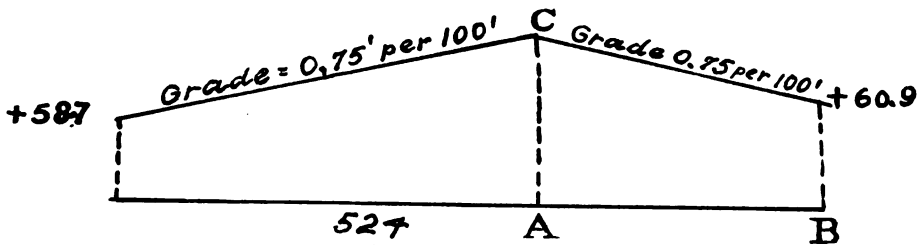


6. In the subjoined sketch compute the location and length of a line A B, which will divide the figure into

two parts having exactly equal areas. Give computation in detail:

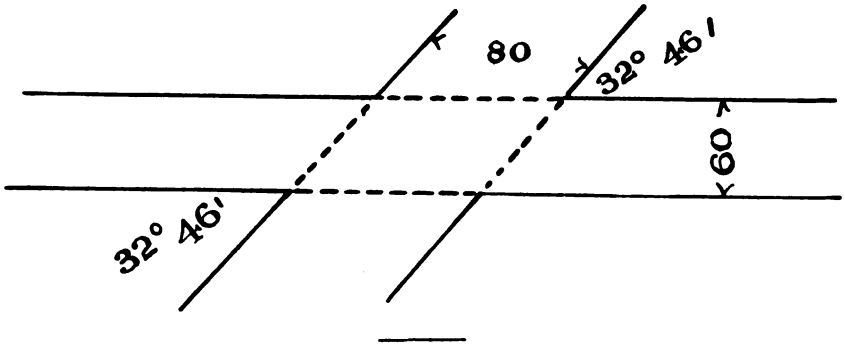


7. The versed sine is 34, the chord 240; determine the radius. Also the area of the smaller segment. 8. (a) Give a method for determining the angles of a triangle when the three sides are given. (b) Give a method for determining the unknown angle and sides when two angles and one side are given. 9. Determine the distance A — B and the elevation of the point C in the subjoined sketch.



10. Compute the length of the dotted lines and the area of the intersection of two streets as shown on the subjoined sketch. Natural sine of 32 degrees 46 minutes = .5412191; natural cosine of 32 degrees 46 minutes

= .8408816; natural tangent of 32 degrees 46 minutes
 = .643632; natural exsecant of 32 degrees 46 minutes
 = .18923.



DRAFTSMAN,
 DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.
 \$1,200 to \$1,500 per annum, December 11, 1912.

Experience—Weight 2.

(See page 342.)

Mathematics—Weight 3.

1. The three sides of a triangle are 370 feet, 158 feet and 289 feet, respectively. Compute the area of the triangle. 2. The cross section of a macadam road is in the form of a parabolic curve. The width of cartway not including gutters is 80 feet; the middle ordinate is 4 feet. Compute the ordinates for points 10 feet, 20 feet and 30 feet from the center. 3. A line begins at a point "A" on a base line which runs true north and south and 187 feet north of the origin (co-ordinates of "A" = 0.187). The line bears thence N. 47 degrees 27 minutes E. 087.10 feet to a point of curve. Thence the line curves to the north on a curve of radius 695 feet for an arc distance 219 feet, to a point of tangent "B." What is the bearing and length of the line joining

the points "A" and "B"? 4. A segment of a circle whose radius is 50 feet has a middle ordinate of 20 feet. What is the area of the segment?

Practical Questions—Weight 5.

1. A survey party measures a base line taking four readings for each length of tape. Describe fully the corrections to be applied to find the true length of the line.
2. A line bears N. 40 degrees 35 minutes E. to a point of intersection, thence bears N. 50 degrees 35 minutes E. A curve of radius 1,719.12 feet is to be put in to join the tangents. Compute the data to be used in laying out this curve, using method of deflections from the tangent.
3. Describe two methods of plotting survey lines. Which of the two methods that you describe is the more accurate?
4. Make a finished copy in ink and to a scale of one-half inch to the foot of the attached drawing. Note: Drawing and lettering on question "4" will count one-half on the subject of this sheet.

ARCHITECTURAL DRAFTSMAN, ANY DEPARTMENT.

\$900 to \$1,200 per annum, December 10, 1912.

Experience—Weight 2.

(See page 342.)

Mathematics—Weight 3.

1. A simple beam 14 feet in length has a concentrated load of 2,000 pounds acting at the middle. If the dead weight of the beam is 150 pounds per foot, find the following: (a) the reactions; (b) maximum moment at center; (c) section modulus if $S = 8,000$.
2. In problem (1) draw the shear and moment diagrams.
3. How many cubic yards of masonry are contained in a pedestal 12 feet by 30 feet at the base, 8 feet by 24 feet at the top,

and $16\frac{1}{2}$ feet high? What is its cost at \$10.37 per cubic yard. 4. A simple wooden beam 3 inches wide, 4 inches deep and 16 feet span supports a concentrated load of 150 pounds at the middle. What is the unit stress? Is the beam safe? 5. Graphics: A simple beam, 20 feet in length, supports a concentrated load 5 feet from one end. Find by graphic statics the bending moment at every 5 feet of span if the load is 10,000 pounds.

Practical Questions—Weight 5.

1. Sketch and define simple, cantilever and continuous beams. 2. Show conventional signs for the following: Bronze, cast-iron, steel, brick, terra-cotta, concrete and wood. 3. Define and illustrate with a sketch the following: Abutment, coping, buttress, attached or engaged column, sill. 4. Make a neat sketch of a typical box cornice. 5. Make a neat sketch of a column showing and naming the essential parts. 6. Make a finished copy in ink of the attached drawing to a scale of $\frac{1}{2}$ inch to the foot. Drawing and lettering on question "6" will count one-half on the subject of Practical Questions.

CHIEF DRAFTSMAN,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.
\$1,800 per annum, July 22, 1912.

Experience—Weight 2.

(See page 342.)

Practical Questions—Weight 8.

1. Design a modern equipment for a water-supply system for a town of 50,000 persons. Include in your design the following factors: (a) size and construction of reservoir; (b) necessary piping; (c) necessary pumping machinery; (d) necessary buildings; (e) necessary filters. The same to give a supply of 100 gallons daily per capita.

24 cs

Include also the formulas used in reaching your conclusions, and give, in full, *all* your calculations. This reservoir is to receive its supply naturally, and the area of distribution is comparatively level country, rectangular in shape in the proportion of 4:1. The reservoir must be located on one of the short sides of the distribution area, the latter being 9 square miles. 2. State in brief the outline of an efficiency test for your design. 3. Give a complete sketch of your design, showing the location of the reservoir, the pumping station, the filter plant, and the principal lines of distribution.

ENGINEERING DRAFTSMAN,
DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.
45 cents to 60 cents per hour, October 14, 1912,

Experience—Weight 3

(See page 342.)

Mathematics—Weight 3.

1. The length of a city block is 524 feet, the curb elevation at one end is plus 60.80, and at the other end is plus 62.60; a summit is established between the two by intersecting grades of one foot per hundred feet. What is the elevation of the summit and how far is it from each end? 2. The following offsets were taken on one side of a base line, to determine the area between it and an irregular boundary line. The distances are all from zero: Distance feet, 0, 202, 358, 825, 984, 1,223. Offset feet, 20.7, 31.5, 42.6, 53.2, 36.1, 40.7. What is the included area? 3. The chord of a circle is 100 feet and the middle ordinate is eight feet. What is the radius of the circle? 4. The bearings of three sides of a plot of ground are: South 40 degrees 20 minutes west 428 feet; south 49 degrees 40 minutes east 326.05 feet; north 40 degrees

20 minutes east 368 feet. Find the bearing and length of the fourth side, and the interior angles of the plot.

Practical Questions—Weight 4.

1. Given the following page of profile notes, supply the omissions and plot a profile of the line, and design an appropriate title.

Station	B.S. +	H.I.	F.S. -	Elev.	B. M. & T. P. Elev.	Description
B. M. 3	12.23				22.748	Monument 24 on line
0			9.8			
1			6.6			
2			3.0			
T. P. 1	11.18		1.48			Spike in stump 30' E. of line opposite Sta. 2+50
3			6.1			
+65.0			2.7			
4			3.7			
+20.7			5.2			
5			6.7			
6			11.2			
T. P. 2	3.48		5.62			Spike in stump 8.0 on line opposite S t a. 6+80
7			10.2			
8			8.6			
9			7.6			
+62.4			4.0			
10			2.4			
+43.0			1.1			
11			2.6			
12			8.0			
T. P. 3	0.42		11.13			Boulder 15' W. of line (crow-foot on top)
13			2.8			
14			8.7			
+23.8			11.2			
B. M. 4			4.78			Monument 25 on line

2. Define and illustrate by neat sketches: A simple curve; a compound curve; a reverse curve; a vertical curve; a spiral. Name the elements of a simple curve. 3. Describe the methods of enlarging and reducing the scale on maps. What instruments are used in each? 4. Determining the area of a figure by planimeter (to be called out of examination room). 5. What information should be shown on a City plan? 6. A subway is to be built of a width 24 feet between neat lines of concrete. On the sides the excavation line is to be three feet outside of neat line of concrete; on the bottom, the excavation line is to be three feet below top of rail. The track is on a minus 1 per cent. grade. The elevation top-of-rail at station $52 + 00$ is 63.80. Compute the number of cubic yards of cut between station $52 + 00$ and station $53 + 00$, using average end areas for every twenty-foot station. The cross sections of the original surface are as follows:

Station Number	Elevations				
	20' L.	10' L.	C. L.	10' R.	20' R.
52 + 00	81.0	80.0	80.0	79.5	80.5
52 + 20	81.5	80.1	81.0	80.5	80.9
52 + 40	82.0	81.0	81.4	80.0	80.6
52 + 60	81.9	81.3	81.3	81.1	81.5
52 + 80	81.0	80.8	81.1	80.9	80.7
53 + 00	80.6	80.6	81.0	81.5	80.7

Plot the sections neatly on cross-section paper, showing original surface, excavation lines, and the area of each section. Put the computations for volume in tabular form.

ENGINEERING DRAFTSMAN,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.
\$1,200 to \$1,500 per annum, December 12, 1912.

Experience—Weight 2.

(See page 342.)

Mathematics—Weight 3.

1. Find by logarithms the value of C in the following equation, using $h = 19$ and $d = 2$:

$$C = 0.5925 + \frac{0.018}{h^{1/2} d^{3/2}}$$

2. Compute the weight of a cylindrical steel tank when three-quarters filled with water. The base of the tank is 2 inches thick, and the height from the bottom of the base to the top of the tank is 18 feet 6 inches. The inside and outside diameters are 3 feet $4\frac{1}{2}$ inches and 3 feet 6 inches, respectively. The weight of the steel is 490 pounds per cubic foot.
3. The tangent of an angle is one (1). Find the numerical values of the remaining trigonometric functions.
4. What thrust in tons will be exerted at the ends of a 48-inch pipe when it is being tested to a pressure of 200 pounds per square inch?
5. In a triangle A B C, A B is 121 feet, the angles C A B and C B A are 61 degrees 20 minutes and 50 degrees 18 minutes, respectively. Compute the sides A C and B C.

Practical Questions—Weight 5.

1. Compute the horse power of a pump to raise 1,000,000 gallons per day through a height of 200 feet when the diameter of the pipe is 12 inches and the length 1,200 feet. Consider frictional loss only and use .02 for the value of the friction factor.
2. What must be the thickness of an 18-inch wrought-iron pipe to withstand a pressure of 120 pounds per square inch when the working unit stress is 5,000 pounds per square inch?
3. Name five

materials used in construction and show by sketches the usual means of representing them on a detailed drawing. 4. Show by a sketch a typical layout of water pipe with valves, etc., in a city block. 5. Make a finished copy in ink and to a scale of one-half inch to the foot of the attached drawing. (Note: Drawing and lettering on question "5" will count as two-fifths on the subject of Practical Questions.)

MECHANICAL DRAFTSMAN, ANY DEPARTMENT.

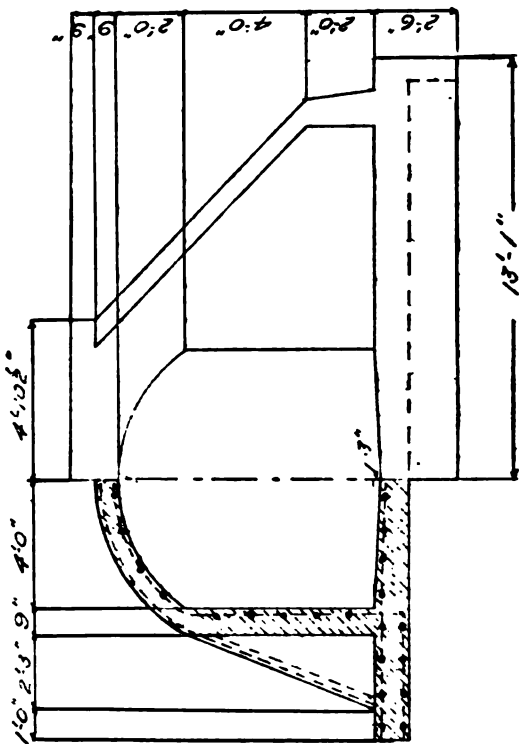
\$1,200 per annum, October 5, 1912.

Experience—Weight 2.

(See page 342.)

Mathematics—Weight 3.

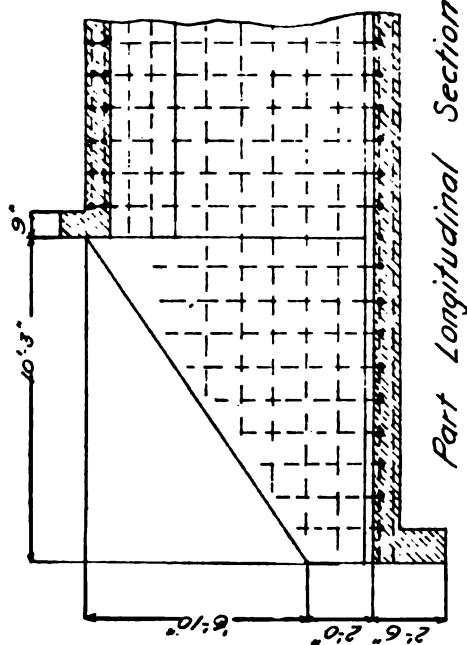
1. The internal diameter of a concrete tank is 30 feet 6 inches, the external diameter is 33 feet; the floor is 2 feet 6 inches thick; the elevation of the bottom of the floor is 109.62 feet; the elevation of the top of the tank is 127.87 feet. What will be the weight of the tank, assuming concrete as weighing 140 pounds per cubic foot?
2. A pipe discharges 486 cubic feet of water per minute. (a) What will be the total discharge for 24 hours in gallons? (b) How many acres of land will the discharge for 24 hours cover at an average depth of four inches? Consider the land impervious to water.
3. Given the diameter of a circle as 72 feet, what is the area of the inscribed hexagon?
4. A circular arc is subtended by an angle of 60 degrees at the center of a unit circle. What are the numerical values of the six trigonometric functions?
5. Extract the square root of 573,029.318190 to four places of decimals.
6. Add 24 feet $5\frac{7}{8}$ inches, 12 feet $6\frac{1}{4}$ inches, 14 feet $1\frac{3}{8}$ inches, 19 feet $7\frac{3}{4}$ inches, 18 feet $5\frac{1}{8}$ inches, and reduce the total to feet and hundredths of a foot.



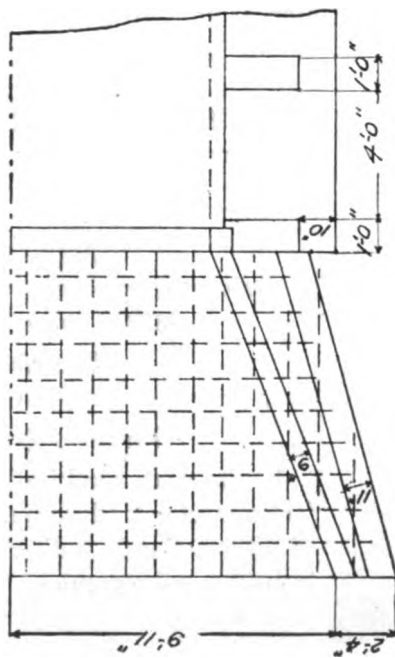
Section End Elevation

*All reinforcement $\frac{3}{4}$ " diam. rods, 1'-0" c.to c
and imbedded 1'-2".*

**REINFORCED CONCRETE
ARCH CULVERT**
Scale $\frac{1}{4}$ " = 1'-0"



Part Longitudinal Section



Part Plan

See Question 5, top of page 376.

Practical Questions—Weight 5.

1. (a) Describe and illustrate by sketch the graphical method of dividing a line into five equal parts. (b) Describe your method of drawing an ellipse, and illustrate—assume major axis as $1\frac{1}{2}$ times the minor axis. 2. Show four ways of expressing the scale for a map. 3. What are the conventional signs used in drawings to represent wood, brick, concrete, steel, brass? 4. Name any three types of pumps and describe their operation. 5. Give sketches showing two methods of support generally used in the setting of horizontal tubular boilers. 6. Describe two systems of coal carrying machinery and illustrate each by a sketch showing the essential details. 7. Make a neat sketch showing the lay-out of the feed water piping for a battery of four boilers, with two feed pumps, a meter, two condensing engines with vacuum heaters and condensers, an atmospheric heater, an economizer, and an auxiliary feed pipe with an injector. Show the direction of flow in the pipes from the cold-water supply pipe to the point of entry to the boilers, and the necessary valves. The plant is to work continuously without shut-down. 8. Show two different styles of lettering by copying question 5.

ASSISTANT ENGINEER,
DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.
\$3,000 per annum, July 19, 1912.

Experience—Weight 2.

(See page 342.)

Practical Questions—Weight 8.

1. Draw up specifications and make sketches for a 4-foot diameter brick sewer. The sketches to show methods of construction in ordinary soil, in quicksand, in rock and in soft, marshy ground. 2. What are the principal points

that should be stated in drawing up the specifications for a terra-cotta sewer of a small diameter? 3. (a) How is the size of a storm water sewer determined? (b) What would you consider the minimum grade of a street sewer collecting sewage only? 4. Make sketches of sewer man-holes, showing the various types of covers. 5. (a) On what should an engineer exercise most vigilance in the inspection of the construction of a brick sewer, a terra-cotta sewer and a concrete sewer? (b) What precautions should be observed in backfilling of trenches and in repaving over them? 6. What are the ordinances of the City of Philadelphia affecting the use of streets in sewer construction? 7. Outline briefly the principles of the bacterial methods of sewage disposal. Explain some of its advantages and defects. 8. Give a form for a sewer inspector's daily report. 9. What size braces and sheeting would ordinarily be used in sinking a trench for a 3-foot diameter sewer to a depth of 20 feet in soft ground. 10. Describe the different kinds of subsoil encountered in various parts of Philadelphia. 11. (a) What are the relative merits of crushed stone and river gravel used in concrete mixtures? (b) Name in the order of their merit the kinds of crushed stone, commonly used in Philadelphia, in concrete work. 12. Design a reinforced concrete slab bridge, 14-foot span to carry a ten-ton tandem steam roller. Include in this design the reinforcement for the wing walls. 13. What is the least proportion of sand and cement, to broken stone, that can be used in the construction of massive concrete retaining walls? 14. (a) What are the impurities most generally found in sand and Jersey gravel, used for making mortar and concrete? (b) What is the effect of their use on the finished work? 15. What methods are generally employed in making concrete water-proof? 16. In prosecuting concrete work in freezing weather, what property of cement is desirable?

17. State the number of bags of Portland Cement and the number of tons of sand to be used in 100 cubic yards of mass concrete. Proportions 1 : 3 : 5, stone 1½-inch size.
18. What effect has frost on the pointing of cement masonry? 19. What are the most common defects which develop in stone masonry retaining walls and in concrete retaining walls? 20. (a) Give brief specifications for a first-class rubble masonry retaining wall. (b) Name and describe the different classes of stone masonry.

ASSISTANT ENGINEER,

DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.

\$4,000 per annum, July 22, 1912.

Experience—Weight 2.

(See page 342.)

Practical and Technical Questions—Weight 8.

1. (a) Work out stress diagram for a Pratt Deck Truss Bridge, 175-foot span, to carry travel for a 60-foot-wide street containing a double-track electric railway. (b) Make sectional sketches showing details of the finished structure of the above bridge. (c) Make the necessary calculations and the plans for the details of the connections of the central panel of the upper chord, using unit stresses for the various members in accordance with Philadelphia practice. (d) Make sketches showing two accepted methods of supporting the paving for the above structures. (e) Considering the above truss as one of four spans crossing a river, illustrate by sketches how changes in the lengths of the spans, due to temperature variation, can be provided for. (f) Soundings taken at the location of one of the piers of the above bridge give the following data: Maximum depth of water, 12 feet; depth of mud, 3 feet; mixture of sand and coarse gravel, 6 feet; total distance to underlying rock from surface of the water, 21 feet; rock approximately level. Submit

sketches showing all details of design of pier at this location. Height of lower chord above water level, 20 feet. (g) What factors enter into the determination of the thickness of a bridge pier? 2. Discuss the theory of the design of a reinforced concrete arch. 3. State maximum spans for 4-inch and 6-inch concrete floor slabs according to Philadelphia practice, giving also the size, character and spacing of the reinforcing rods. 4. Discuss the relative properties of the various kinds of bars used in reinforced concrete work. 5. Give the standard tests that should be used in passing upon the quality of cement. 6. Draft short specifications for a first-class rubble masonry retaining wall. 7. Make a sketch showing cross section of a retaining wall, the height of which is 25 feet above the heat line. Indicate at what point would be the maximum thrust. 8. (a) What are the ordinary proportions used in mixing cement, sand and crushed stone, for reinforced concrete work? (b) What are the arguments in favor of wet and dry concrete mixtures, and when should each be used? (c) What are the effects of frost on freshly laid concrete, and how should an engineer determine when it is unsafe to place concrete in freezing weather? 9. What is meant by tensile strength; elastic limit; percentage of elongation and percentage of reduction of area, of steel, and how would you determine them?

ASSISTANT ENGINEER (SEWAGE DISPOSAL),
DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.
\$2,400 per annum, October 1, 1912.

Experience—Weight 3.

(See page 342.)

Practical Questions—Weight 5.

1. Name the different methods of sewage disposal, indicating those which are preferable for cities situated as

Philadelphia, Boston, Pasadena, California. What system would you recommend for Philadelphia? State your reasons. 2. What effect, if any, would the metering of Philadelphia's water supply have on the present system of sewers? 3. What chemicals are used in sewage treatment? What are the relative merits of each, and how do they affect further treatment? 4. Discuss the various methods of sludge disposal. What method of sludge disposal is used at London and Manchester? 5. What are the methods of preliminary treatment? Why are they used? 6. What are the principal constituents of raw sewage? What controls the strength of sewage? 7. Describe in detail the chemical actions which take place in sewage treatment. 8. When, where, and under what conditions does bacterial action take place in sewage treatment? 9. How are samples of sewage taken in order to determine the degree of chemical and bacterial purification? 10. When is disinfection of effluent practised? What materials and what quantities of disinfectants are used? 11. What records should be kept at a disposal plant? Draw up a form showing the daily operation of such a plant.

Report Writing—Weight 2.

Write a report describing the complete design of a sewage system, telling how you would collect the necessary data for the design; your method of design with formulæ used; the system of disposal recommended, and the complete course of the sewage in the disposal plant from the point of entry to the discharge as purified effluent.

ASSISTANT ENGINEER,
DEPARTMENT PUBLIC WORKS (DIRECTOR'S OFFICE).

\$1,500 per annum, December 10, 1912.

Experience—Weight 2.

(See page 342.)

Mathematics—Weight 3.

1. Give the numerical values of the six trigonometric functions of an angle of 120 degrees. 2. Compute the volume of concrete in a circular manhole whose inside and outside diameters at the top are 3 feet 0 inches and 4 feet 6 inches respectively. The height of the manhole is 15 feet 0 inches and the batter is 1 : 12. 3. Two stations "A" and "B" are separated by a swamp. The distances AC and BC are measured accurately and found to be 382.52 and 347.66, respectively; the angle ACB is found to be 62 degrees 31 minutes. Compute the distance from A to B. 4. In topographical survey the height of instrument at Station "A" was Elev. 16.5. Two stadia readings were taken from "A" as follows:

Azimuth.	Distance.	Vertical Angle.
160 deg. 56 min.	352 feet	—2 deg. 07 min.
140 deg. 46 min.	228 feet	—1 deg. 08 min.

Compute the elevation of the two points and determine the rate of grade between them.

Practical Questions—Weight 5.

1. (a) In what three ways is rainfall disposed of naturally? (b) With which of these does the drainage engineer have to deal? 2. (a) Make a sketch showing the ground water surface or "water table" in the vicinity of a river or swamp. (b) How may the ground water elevation be lowered? What form does the "water table" assume in case a well is driven or a ditch is dug? 3. What effect has the lowering of the ground water level on a

swampy district, and how would this bear on the problem of mosquito prevention? 4. Describe the method of mosquito prevention by the use of oil. What natural causes render a single oil treatment ineffective? 5. Describe in detail the method of mosquito prevention by using drainage ditches. How must the ground surrounding the ditches be treated, and what breeding places must be removed? 6. The following profile notes were taken for a drainage ditch:

Station	+S	H. I.	-S	Elevation	Description
B.M.1	5.28	—	—	81.67	Cut on footing of wall 100 feet from bridge abutment.
0	—	—	11.7	—	
1	—	—	11.4	—	
2	—	—	11.9	—	
3	—	—	12.2	—	
4	—	—	11.8	—	
+40	—	—	10.1	—	
5	—	—	12.0	—	
T.P.1	3.25	—	11.45	—	
6	—	—	4.0	—	Top of boulder 30 feet west of line.
7	—	—	3.8	—	
8	—	—	4.2	—	
9	—	—	3.9	—	
10	—	—	4.1	—	

The bottom of the ditch at Station O is to be elevated 20.00. The grade of the ditch is —0.4 per cent. Compute the excavation of a ditch five feet in width the sides to be vertical. What would be the cost of excavation at \$0.75 per cubic yard? 7. A piece of ground was found to be a breeding place for mosquitos, and is to be filled in, because ditching is impractical. A survey was made and the accompanying data obtained. What would be the cost of the operation if dirt in place and graded costs 75 cents per

cubic yard? Use method of average end areas in computing volume: Beginning at a stone. Thence N. 40 degrees 20 min. E. 172.15 feet to a stake; thence N. 64 degrees 40 min. W. 124.24 feet to a stake; thence S. 40 degrees 20 min. W. 140 feet to a stake; thence S. 49 degrees 40 min. E. 120 feet to the place of beginning. Cross sections: The longest line of traverse is the base line for X-sections, and the point of beginning of traverse is the origin of X-sections. The readings in the table have been reduced to distance below finished grade.

North	West	0	20	40	60	80	100	120
0	—	4.3	4.5	3.9	4.2	5.1	4.7	4.2
20	—	4.0	4.6	4.3	5.0	4.8	4.6	4.1
40	—	4.8	4.4	4.7	5.3	5.0	3.4	3.8
60	—	4.3	4.4	5.0	5.3	4.9	4.6	4.0
80	—	4.0	4.8	5.2	5.5	5.1	4.9	4.7
100	—	3.6	4.3	4.8	4.4	4.9	4.7	4.3
120	—	1.1	2.0	3.5	2.6	2.0	2.2	2.7
140	—	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160	—	0.0	0.0	—	—	—	—	—

The grade runs uniformly from Station O north to 160 north. No allowance is to be made for fill outside of traverse lines.

FIRST ASSISTANT (PROMOTION),
DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.
\$1,200 per annum, July 23, 1912.

Experience—Weight 2.

(See page 342.)

Practical and Technical Questions—Weight 8.

1. Denote my position by A and the position of an inaccessible object by B. I measure a base line $AC = 134$

yards, and the angles BAC 73 degrees 14 min., BCA 49 degrees 10 min. Find distance AB. 2. The length of a lake from a certain viewpoint subtends an angle of 38 degrees 46 min., and the distance from this point to the ends of the lake are 470 yards and 345 yards, respectively. What is the length of the lake? 3. The angle of elevation of the topmost point of the Philadelphia City Hall is 29 degrees when measured from a level street at a point 990 feet from the base of the tower. What is the height of City Hall tower? 4. The base of a retaining wall is 12 feet wide, and top 4 feet wide. Three offsets on the back of the wall divide the back into equal steps, each 3.5 feet high and 1.5 feet wide. What is the slope of the front of the wall per vertical foot? What will the wall cost per lineal hundred feet at \$3.40 a perch. (Legal perch = 24.75 cubic feet.) 5. AD is a curb-line with stakes at B and C. Elevation B 52.14 top of stake, elevation C 52.48 top of stake. Give cuts or fills at B and C, results to be in feet, inches and fraction of inches. 6. Show by sketch how you would give lines and grades for a main sewer to be constructed through a low wet section. 7. A street 275 feet long is cut through a sandy soil and parallel to a straight railroad track, a retaining wall is required for the entire length. The height of the track above the street level is 24 feet and the distance from the center of the street to the center of the track is 48 feet. The street is 60 feet wide. Design a concrete retaining wall to meet the conditions, and estimate the cost. How would you vary your plan if you were to fill behind the wall instead of cut through solid earth? 8. Two streets intersect at an angle of 55 degrees 30 min. One of them is 100 feet wide, the other 70 feet wide. Calculate the area of the intersection. 9. A street AB is 400 feet long and 50 feet wide. The elevation of A being 103.0 and of B 112.0. Intermediate points on AB are 50 feet apart and the elevations of

the original surface at these points are: C 103.0, D 101.0, E 105.0, F 106.0, G 107.0, H 111.0, K 112.0. It is required to grade the street with a vertical cut and $1\frac{1}{2}$ on 1 slope in the fill. How much will be the cut and fill?

SECOND ASSISTANT (PROMOTION),
DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.
\$960 per annum, July 24, 1912.

Experience—Weight 2.

(See page 342.)

Practical Questions—Weight 8.

1. On the opposite side of a lake are two posts A and B. Perpendicular to the line AB, along one shore, a line BC = 300 yards is measured. The angle ACB is 50 degrees. Find the width of the lake. 2. From the top of a tower two milestones are observed on a straight horizontal road leading to the foot of the tower. Their angles of depression are 3 degrees and 27 degrees, respectively. Find the height of the tower in feet. 3. Give the process by which you would accurately measure an angle and describe your method of checking the work. 4. Starting from a bench-mark whose elevation is known, a series of foresights and backsights is given. How would you obtain the elevation of the last foresight? 5. Two curb lines, AB and CB, intersect at 45 degrees. Determine the radius of the curved curb that will be tangent to a line MN, MN being perpendicular to AB, and BM being 20 feet. 6. Describe the process by which you would set grade stakes for paving the streets surrounding a city square, no two of the four corners having the same elevation. Give the number of men needed to do the work and the time necessary to accomplish it. 7. Avenue A is 100 feet wide and Brown street 60 feet wide. They intersect at

30 degrees. How many square yards of paving will be needed for the intersection? 8. Calculate the cost of 100 lineal feet of earth wall for a reservoir, the depth of same being 9 feet 6 inches, the inner slope 2 to 1, and the outer slope $1\frac{1}{2}$ to 1, the top 6 feet wide. The inner slope is to be faced with rubble stone pitching 15 inches thick. The cost of the earth at the site is \$0.24 per cubic yard, and the cost of the pitching is \$5.75 per cubic yard.

SECOND ASSISTANT ENGINEER (H. P. F. S.),
DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.

\$1,500 per annum, October 24, 1912.

Experience—Weight 3.

(See page 342.)

Mathematics—Weight 2.

1. The water in a distribution pipe at elevation + 50 is under 60 pounds pressure. What pressure should be noted at elevation + 100? No allowance is to be made for friction. 2. Compute the grades of the pipe line, also the elevations at intermediate stations Station 1 + 50 elevation + 38.60; Station 3 + 00 elevation + 41.20; Station 6 + 00 elevation + 45.18. Stations located every 100 feet. 3. What is the length of a curved pipe 15 feet radius, having an arc of 80 degrees? 4. What would be the displacement of a pipe 400 feet long, having an outside diameter of 20 inches? Answer to be in cubic yards. 5. A street 50 feet wide intersects a street 60 feet wide at an angle of 70 degrees. What are the dimensions of the intersection along house lines?

Practical Questions—Weight 5.

1. In laying a pipe, what field work is necessary to keep a record of the progress of the work, and also for the estimate of quantities? 2. How should you prepare the

monthly estimate of work performed? 3. If a brick sewer crossing over the proposed pipe line should break, how would you repair the sewer? 4. Describe the method of repaving an asphalt street after the pipe work has been completed. 5. What general precautions should be observed during the progress of the work, to provide for the safety of the public? 6. When the pipe is in service, should a break occur in the line, what would you do? 7. After the sections have been bolted together, it is found necessary to deflect the line a small amount. How would you do this, if using a straight pipe? 8. (a) What fittings would you use in passing over a sewer? (b) What fittings would you use in making a fire-hydrant connection? 9. Show by cross section the materials used in paving a 50-foot wide street with the following: (a) Asphalt, (b) stone block, (c) vitrified brick. Give the depth of each material.

THIRD ASSISTANT ENGINEER (H. P. F. S.),
DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.

\$1,000 per annum, February 26, 1912.

Experience—Weight 1.

(See page 342.)

Practical Questions—Weight 9.

1. If about to lay a pipe line 1,000 feet long in a city street, how would you give lines and elevations for the same? 2. Having a pipe line 200 feet long, if the trench is 3 feet wide at the bottom and 5 feet deep, the sides with a batter of 1 inch per foot, what is the excavation in cubic yards? 3. A circular brick manhole, 4 feet inside diameter at the bottom, 2 feet inside diameter at the top, is 5 feet high, with walls 9 inches thick. How many cubic yards of bricks will be required? 4. What lines are necessary in setting a fire hydrant? 5. A line 300 feet long contains blocking spaced averaging 6 feet centers, each

block 3 inches by 4 inches by 24 inches. Give the quantity of blocking in feet B.M. 6. If a pipe line is to have an elevation of +26.4 at Station 0; +27.4 at Station 2, and + 28.0 at Station 3 + 50, what are the gradients between points? 7. A pipe line 200 feet long to have top of pipe elevation + 50.20 at one end and + 52.20 at the other end. Give the elevation of each length of pipe. 8. In a line of pipe 300 feet long, elevations, surface of street, are as follows: Station 0 Elev. + 63.0; Station 0 + 50 Elev. + 63.5; Station 1 Elev. + 64.0; Station 1 + 50 Elev. + 64.8; Station 2 Elev. + 65.0; Station 2 + 50 Elev. + 64.1; Station 3 Elev. + 63.5. Trench required, elevation bottom Station 0 is + 58.5, at Station 3 is + 60.0. Required the cuts at each station; give your notes. 9. A pipe line is 500 feet long and 2 feet outside diameter. How much earth will it displace? 10. A pipe trench 3 feet 6 inches wide at top is to be repaved for length of 400 feet, pavement to be allowed one foot each side of trench. How many cubic yards of concrete 6 inches thick will be used?

THIRD ASSISTANT TO CHIEF,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.
\$1,600 per annum, December 23 1912.

Experience—Weight 3.

(See page 342.)

Practical Questions—Weight 7.

1. What is the thermal efficiency of a steam engine and how is it expressed? 2. What is the mechanical efficiency of a steam engine and how is it expressed? 3. What is a British Thermal Unit, or B. T. U.? 4. What is a horse power? 5. Give the formula for determining the indicated horse power of an engine. 6. What is mean ef-

fective pressure in an engine cylinder? 7. What is an indicator and for what purpose is it chiefly used? 8. Name the most important things that may be determined by the use of an indicator. 9. What is an indicator diagram? 10. Draw a diagram such as would be produced by one end of a cylinder with Corliss valves working under normal conditions. Show which is the head end and mark clearly where the various portions of the diagram begin and end. 11. How would you determine the horse power of an engine from its indicator diagram? 12. What is a Prony brake and for what purpose is it used? 13. Give a formula for determining the brake horse power of an engine. 14. How would you determine the thermal and mechanical efficiency of an engine? 15. How would you measure the amount of steam consumed by an engine? 16. What is superheated steam? 17. What is saturated steam? 18. What is a compound engine and what are its advantages over a simple or single expansion engine? 19. What is a triple expansion engine and what are its advantages over a compound engine? 20. What are the factors to be used in selecting the proper size of pipe for conducting steam and water and how should they be used? 21. If two water pipes each two inches in diameter join or meet in a single pipe, what should be the diameter of the single pipe? 22. What is the maximum vertical distance that a suction pump will lift cold water? 23. What effect does temperature have upon the height to which water may be raised by a pump? 24. How would you determine the horse power required to operate a pump of given capacity? 25. What is the actual power required to force 1,000 gallons of water per minute to a height of 75 feet neglecting friction or other factors? 26. What is a condenser and what are the principal types in general use? 27. Is a condenser of any assistance to a power plant and, if so, why? 28. What is a vacuum and how is it measured?

29. What is the maximum degree of vacuum that can be expected from a condensing plant working under ideal conditions? 30. What is a return tubular boiler? 31. What is a water tube boiler. Name some of the principal makes in general use. 32. Make a sketch showing vertical longitudinal cross section of one of the makes mentioned under "31." Show arrangement of drums, tubes, headers, baffle plates, grates, doors, ash pit, etc. 33. What methods are generally used for feeding water to the boiler? 34. What is priming and how is it prevented? 35. What is a separator and where should it be placed? 36. What is a feed water heater and is there any advantage in using it? 37. What is a superheater and where is it generally placed? 38. What two methods are generally used for producing draught in a boiler? 39. How would you obtain the horse power rating of a boiler? 40. Describe briefly how you would conduct an efficiency boiler test. 41. What method of firing would you recommend for burning bituminous coal to the best advantage? 42. What precautions should be observed for preventing excessive smoke? 43. About what analysis should a good steam coal have? 44. How many British Thermal Units to the pound should there be in good steam coal? 45. What causes boiler scale and how can it be prevented? 46. What per cent. strength should there be in the longitudinal seam of a properly designed boiler drum? 47. Define "Factor of safety"; "fiber stress"; "tensile strength"; "elastic limit." 48. For necessary safety how often should boilers be inspected and of what should the inspection consist?

STATISTICAL ENGINEER,
DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.

\$1,000 per annum, October 9, 1912.

Experience—Weight 2.

(See page 342.)

Practical Questions—Weight 6.

1. A portion of the City, three blocks long and three blocks wide is bounded and divided by streets running north and south, and east and west. The distance from center to center of each and west streets is 450 feet, and of north and south streets is 350 feet. The width of all streets is 50 feet. The populations of the blocks along the north boundary from west to east are 250, 175 and 227, respectively; the adjoining blocks to the south from west to east are 119, 223, and 160, respectively; along the south boundary from west to east 87, 106 and 254. Make a diagram of the above, and assuming that the block population is uniformly distributed, compute and locate the center of population. 2. Assuming Market and Eighth streets as the "point of destination" and a trolley running on Fifteenth street from North Philadelphia station to Market street as the *only* line in service, show clearly how you would work out a system of time zones indicating the time required to reach the point of destination from any point in the territory south from North Philadelphia station to Market street and bounded by Eleventh and Nineteenth streets. 3. Tell how you would determine the time zones for the same territory if a subway were placed on Broad street connecting with the present subway on Market street, and having stations at Callowhill street, Fairmount avenue, Girard avenue, Columbia avenue, Susquehanna avenue, Lehigh avenue and Cambria street. No transfers are to be given to cross lines. 4. State in detail a method of obtaining the number of street car passengers

who get upon cars in the territory bounded by Lehigh avenue, Fifteenth street, Twenty-second street and York street; where the final destination is between Race street, Sixth street, Walnut street and Tenth street.

Report Writing—Weight 2.

Write a report (about 300 words) on the advantages to West Philadelphia in transportation facilities resulting from installation of the elevated system.

PURVEYOR,

DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.

\$1,480 per annum, July 31, 1912.

Experience—Weight 3.

(See page 342.)

Arithmetic—Weight 2.

1. The total number of feet of pipe in use in the Sixth district in 1909 was 5,728,697. During 1910 there were laid 95,170 feet; relaid 1,224 feet; taken up 1,549 feet; abandoned 1,984 feet. In 1911, 84,327 were laid; 1,220 relaid; 1,246 taken up, and 2,147 abandoned. Find the total number of feet in use December 31, 1911. 2. Multiply 4.9387 by 7.5; divide the product by 2.25, and add 4.087 to the quotient. 3. A trench 6 feet deep, 2 feet 6 inches wide, and 54 yards long is to be dug in a certain district. Allowing 162 cubic feet per day per man, how many men should be employed to dig this trench in 3 days? 4. One laborer can dig $7\frac{1}{2}$ feet of trench in $\frac{1}{3}$ of a day, and another laborer can dig $5\frac{1}{4}$ feet in $\frac{1}{2}$ a day. How many feet can they both dig in $7\frac{3}{4}$ days? 5. An appropriation of \$10,500 was spent in three operations. The first cost \$2,500, the second \$4,500, and the third, the remainder. What per cent. of the appropriation was spent on each operation?

Practical Questions—Weight 5.

1. (a) Outline a scheme for keeping a record of the various operations in your district. (b) What data would you include in this record? 2. Describe the complete operation necessary for the repair of a broken 6-inch cast-iron service main in an asphalt paved street. 3. What are the relative merits possessed by the following kinds of pipe with respect to (a) strength, (b) durability, (c) original cost, (d) cost of maintenance; 1, cast iron; 2, steel? 4. What is the capacity in gallons per day of each of the following high service stations: Wentz Farm, Roxborough, George's Hill? 5. From what service does each of the following sections receive its water supply: Holmesburg, Frankford, Roxborough? 6. Describe in detail the method (a) of making a lead joint with bell and bead pipe, (b) of connecting high-pressure fire service mains. 7. Show by drawings the structure of a (a) vitrified brick paved street, (b) wood block paved street, (c) an asphaltum paved street. 8. Suppose you received word in the middle of the night that one of the 48-inch mains in your district had burst. Tell exactly, and in detail, what you would do to place the main in service again with the least possible delay.

RODMAN, ANY DEPARTMENT,
ANY BUREAU EXCEPT SURVEYS.
\$900 per annum or less, March 6, 1912.

Experience—Weight 2.

(See page 342.)

Practical Questions—Weight 8.

1. Show by sketch a portion of a Philadelphia rod having the target set at 5.43. 2. What is the difference between a Philadelphia and a New York rod? What are

the advantages of each? 3. The hypotenuse of a right-angled triangle is 8.50 feet, and one side is 1 foot. What is the remaining side? 4. In running a set of levels the following information is obtained:

B. M.	+10.62
B. S.	5.18
Rod at Station 0	5.49
Rod at Station 0 + 50	5.86
Rod at Station 1	5.27
Rod at Station 1 + 50	6.72
Rod at Station 2	7.22

How would you keep these notes, and what is the elevation of the ground at the stations? Define: Bench mark, turning point, back sight, fore sight, height of instrument. 6. When engaged in leveling, it is found that the H. I. is plus 14.50, and it is desired to set two points with the level rod. The elevation of one point to be plus 10.16, the other to be plus 11.20. How should the rods be set? Show your work. 7. Not having an opportunity to adjust the level, it is slightly in error. How would you run a set of levels and do good work? 8. Describe a transit. 9. What is meant by repeating an angle, and why is it done? 10. The bottom of a wall has an elevation of -6.00 city datum. What is the elevation in reference to arbitrary low-water line?

RODMAN, ANY DEPARTMENT.

\$900 or less per annum, December 12, 1912.

Experience—Weight 2.

(See page 342.)

Mathematics—Weight 3.

1. Find the square root of 67893.673 to two places of decimals, and show the remainder. 2. Add the following

and express the total in feet and hundredths of a foot: 116 rods 2 feet 4 inches, 15 rods 1 yard 10 inches, 6 rods 0 yards 9 inches. 3. The sides of a triangle are 96 feet, 74 feet and 48 feet. Find the area of the triangle in acres and decimals of an acre. 4. A piece of ground in the form of a right triangle whose base is 132 feet, and whose altitude is 110 feet is divided into two lots by a line parallel to the base, and at a distance of 52 feet therefrom. What is the area of each lot in square feet? 5. An angle of 30 degrees is formed by two radii of a unit circle, give the numerical values of the six trigonometric functions of the angle. 6. The bearings of the sides AB, BC, CD, DE, EA of a five-sided field, ABCDE, are as follows: N. 50 degrees 20 min. E.; S. 45 degrees 18 min. E.; S. 30 degrees 22 min. W.; S. 80 degrees 46 min W., and N. 10 degrees 47 min. W., respectively. Find the interior angles of the field.

Practical Questions—Weight 5.

1. Define: Bench mark, turning point, datum, back sight, fore sight. 2. What precautions should be used in selecting: (a) A bench mark, (b) a turning point. 3. Why should the length of back sights and fore sights be equal? 4. One end of a line is at Elev. 43.50, the other end is 36.00, the length of the line is 428.60 feet. What is the rate of grade? Compute elevations for every 40 feet beginning at the lowest point on the line. 5. State three ways in which distances can be measured, in order of their accuracy. 6. Describe fully the purpose of a vernier, and give a sketch of a vernier that will read to 0.01 of a foot on a rod graduated to 0.1 feet. 7. Show the form of notes you would keep in running a line of levels with at least three turning points. What check would you have on your notes? 8. Name and describe the essential parts of a transit. 9. Describe fully the operation of ad-

justing a level from the time the instrument is taken out of the box until it is in perfect adjustment. 10. What is parallax in a transit or level, and how can it be removed?

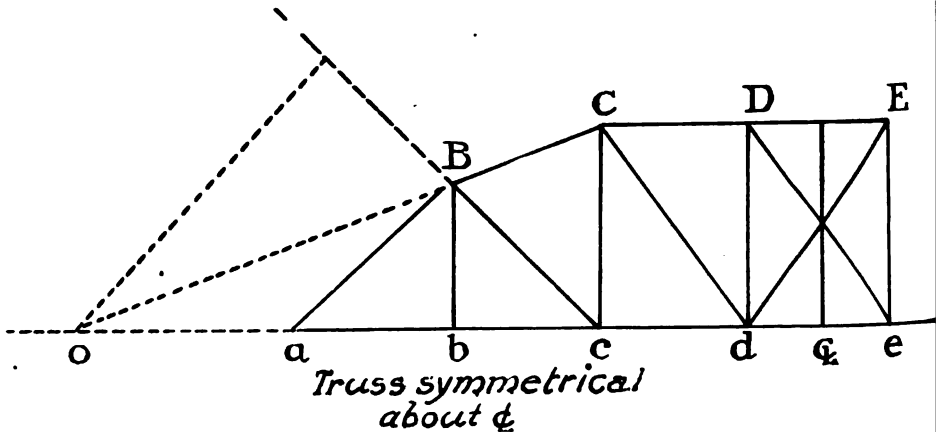
ASSISTANT SUPERINTENDENT OF BRIDGES,
DEPARTMENT PUBLIC WORKS, BUREAU OF HIGHWAYS.

\$1,500 per annum, December 23, 1912.

Experience—Weight 2.

(See page 342.)

Mathematics—Weight 3.



Data for above Parker truss: Span, = 142 feet $11\frac{7}{8}$ inches; panel length, = 20.427 feet; distance OA = 102.135 feet; lever arm for BC = 23.49 feet; lever arm for Bc = 101.1 feet; Sec. θ for Ba = 1.41; top chord panel load = 4,730 pounds; lower chord panel load = 9,460 pounds. Find the stresses in all the members of the above truss. 2. Design a reinforced concrete beam for a span of 20 feet and to support a load of 4,000 pounds at its center. Assume the weight of beam to be 200 pounds per foot, the unit stress of concrete 650 pounds per square

inch and of the steel 16,000 pounds per square inch. Use 15 for the value of the ratio of the modulus of elasticity of steel to concrete. 3. A simple beam acting as a girder has a span of 44 feet. Floor beam loads of 3,725 pounds each act at points 11 feet, 22 feet, and 33 feet from one end. Compute the reactions and the bending moments at the point where each load acts. The beam itself weighs 300 pounds per foot. 4. A simple wooden beam 4 inches wide, 6 inches deep and 40 feet span supports a load of 450 pounds at its center. What is the unit stress?

Practical Questions—Weight 5.

1. Sketch and describe the following trusses: Pratt, Warren, Howe. 2. Give the fundamental conditions of equilibrium for forces in one plane and explain how stresses are derived from these conditions. 3. Compute the maximum and minimum stresses for S S S:

	S.	S.	S.
Dead load	+15.6	+15.6	+12.5
Snow load	+12.9	+12.9	+10.3
Wind on fixed side. .	+13.9	+ 6.0	+ 9.9
Wind on free side. .	+ 2.7	+10.6	+ 2.7

4. Give a complete list of items that would cover the specifications for a typical highway bridge. 5. (a) Give four ways in which a reinforced concrete beam may fail. (b) Why is steel used with concrete? Explain fully. 6. (a) Describe the action of a typical swing bridge, showing in what manner the stresses change. (b) Give three methods of arranging the ends of a swing bridge in order of their relative merits. 7. (a) Give five standard tests for cement. (b) Compute the percentage of air voids in damp sand weighing 91 pounds per cubic foot. The water in the sand amounts to 4 per cent. Use 2.65 for the specific gravity of the sand. 8. Explain fully the action of a "counter." 9. (a) Give three essential conditions that

must be satisfied in designing masonry arches. (b) Give five ways in which a masonry arch can fail. Define the following: Tie, strut, stringer, floor beam, panel point, truss, economic depth, camber, live load, dead load.

TRACER,
DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.
\$.32 an hour, December 12, 1912.

Experience—Weight 3.

(See page 342.)

Practical Questions—Weight 3.

1. What side of tracing cloth is most commonly used? Why? 2. (a) What is the operation of "priming" tracing cloth before tracing? (b) What effect does an excess of powder or chalk have on the tracing? 3. By what colors would you represent: (a) Contours, (b) water lines. 4. (a) What precautions should be taken in erasing? (b) What kind of an eraser would you use? 5. If a tracing is roughened by erasing, how would you give it a smooth surface that will take ink? 6. How would you clean a "blue penciled" tracing without using an eraser? 7. Give conventional signs for the following: (a) Cultivation, (b) grass, (c) a stone fence. 8. Find the circumference of a circle whose radius is 8 feet 4 inches. 9. Find the square root of 7160.5446 to two places of decimals. 10. The base of a right triangle is 46, the altitude is 35, what is the area?

Tracing Exercise—Weight 4.

Make a tracing of the print hereto attached.

TRANSITMAN,
ANY DEPARTMENT (EXCEPT BUREAU OF SURVEYS).
\$1,000 per annum or less, March 6, 1912.

Experience—Weight 2.
(See page 342.)

Practical Questions—Weight 8.

1. Given the line A-B with the transit at B, it is proposed to extend the line to C. How would you do this? Illustrate by sketch.
2. If, when reading an angle, you are told to check your work, describe how this should be done.
3. What is the complement of an angle?
4. What test should be applied to learn if the level tubes of a transit are parallel to the vernier plate? If the tubes are not parallel to the plate, what correction would you make?
5. Describe the vernier of a transit.
6. How would you test a Y level to learn if it is in adjustment?
7. In a curve calculation what is meant by: Degree of curve, tangent distance, simple curve, compound curve, reversed curve?
8. Levels taken on a track are as follows:

B. M.	+3.03
B. S.	4.17
F. S. at point A	5.20
F. S. at point B	5.70
Distance A to B	200 feet

- What is the per cent. of grade between A and B? 9. What is the difference between an engineer's transit and a surveyor's compass? 10. An arc has a chord of 10 feet and a rise of 1 foot. What is the radius? 11. It is desired to grade a roadway 20 feet wide for a distance of 400 feet. One end is called Station 0. The finished elevation at Station 0+00 to be plus 15.20, and at station 4+00 to be plus 17.20. Levels taken along the center line are as follows:

Station 0+00	plus	17.50
“ 1+00	“	16.70
“ 2+00	“	16.00
“ 3+00	“	16.40
“ 4+00	“	16.80

What is the amount of cut and fill? 12. A building obstructs the sight between two ends of a straight line. How would you run this line between the two points? Illustrate by a sketch. 13. In a triangle you have two sides and the angle opposite one of them given. What is the rule for finding the remaining side and angles? 14. A right-angled triangle has one side 40 feet, and the angle adjacent to the side is 20 degrees 40 min. What are the remaining sides and angle? Natural sin. of 20 degrees 40 min. is .35293; natural cos. of 20 degrees 40 min. is .93565; natural tan. of 20 degrees 40 min. is .37720; natural cot. of 20 degrees 40 min. is 2.65109; natural vers. of 20 degrees 40 min. is .06435; natural ex. sec. of 20 degrees 40 min. is .06878.

ENGINEERING SERVICE OPERATING

Experience Sheet for Operating Engineers.

1. Give the names and addresses of two reputable citizens who will vouch for the truth of your answers on this paper. 2. What is your age? 3. What school did you attend? What was the highest reader you studied in school? How far did you go in arithmetic? 4. How long have you had an engineer's license? What kinds of engine (hoisting, portable, stationary, railroad, gas) have you operated? How long did you operate each? What was the power of these engines you operated? 5. What are you doing now?

(a) Who is your employer? (b) How long have you worked for him? (c) What salary do you receive? 6. What are the other most important or longest jobs you have held? Tell in each case: (a) Who your employer was. (b) What his address was. (c) The nature of the work you did. (d) What wages you received. (e) Why you left. 7. Give the names and addresses of your employers whom you would be willing to have consulted as references.

ASPHALT ROLLER ENGINEER (ORAL),
DEPARTMENT PUBLIC WORKS, BUREAU OF HIGHWAYS.
\$100 per month, October 21, 1912.

Experience—Weight 3.

(See page 403.)

Personal and Physical Fitness—Weight 2.

1. What is your age? 2. To what extent do you use liquor or cigarettes? 3. Have you ever been arrested? 4. Sanitary condition of person. 5. Physical fitness.

Practical Questions—Weight 5.

1. Describe the steering gear of an asphalt roller. 2. In setting a slide valve, what parts may be adjusted? 3. What is meant by steam lap? Exhaust lap? Steam lead? Exhaust lead? 4. Name two kinds of reversing gears. Describe one of them. 5. What danger is there in allowing mud or scale to accumulate in a boiler? How do you remove mud? Scale? 6. How do you keep a safety valve free? How do you test its setting? 7. A street of medium width is being newly paved with asphalt. Describe in detail all rolling which would have to be done. 8. A section of asphalt paving about 10 feet square is to be renewed; how would it be rolled?

CHIEF ENGINEER,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$1,500 per annum, June 10, 1912.

Experience—Weight 1.

(See page 403.)

Practical Questions—Weight 9.

1. Make a rough sketch of a water tube boiler, showing all connections and its settings. 2. Explain how you would put a new set of tubes in a boiler. 3. Explain a Cross compound condensing engine. 4. Make a rough drawing of a Worthington pump, showing both the steam and water ends. 5. Make a sketch of a water heater you are familiar with; thoroughly explain it, also state what are its advantages. 6. How would you set the valves on a Corliss engine? 7. Explain both the jet and surface condensers. 8. Make a sketch of indicator card taken off of a Corliss engine and thoroughly explain it. 9. Explain both the ice making and refrigerating plant. 10. Explain what data you would expect to keep in a log-book of a power plant, which included, in addition to the machines mentioned in the above questions, two dynamos driven by reciprocating engines. 11. Explain the difference between a direct current and an alternating current dynamo and how you would start two machines of either type for operation in parallel. 12. What causes sparking at the brushes on a direct current machine, and how would you avoid it? 13. Explain how you would care for a dynamo which was in nightly use to insure proper operation.

ENGINEER, ANY DEPARTMENT.

Less than \$800 per annum, March 6, 1912.

Experience—Weight 2.

(See page 403.)

Practical Questions—Weight 8.

1. How would you set the valves on a slide-valve engine?
2. Give an explanation how you would start a boiler.
3. If your boiler was foaming, what would you do?
4. How do you clean a boiler and get it ready for inspection?
5. How do you know when your safety valve is in good working condition?
6. Give a full explanation how you would start up your engine.
7. If the water in your boiler were low and out of sight, what would you do?
8. Explain how you operate an injector.
9. How would you grind in a leaky valve?
10. Make a rough sketch of a horizontal tubular boiler.

ENGINEER, ANY DEPARTMENT.

\$800 to less than \$1,100 per annum, March 7, 1912.

Experience—Weight 2.

(See page 403.)

Practical Questions—Weight 8.

1. How would you set the valves on a Corliss engine?
2. Make a rough sketch of a cross-head of some engine you are familiar with.
3. Make a sketch of a water tube boiler with all its connections.
4. Explain some governor you are familiar with, and on what principle does it operate?
5. Explain a condenser. How is it operated and what use is it?
6. How would you set the steam valves on a Worthington pump?
7. Make a sketch of the piston and piston rod; also showing the piston rings.
8. What would be the horse power of the following engine: 12-inch diameter, 18-inch stroke, making 80 revolutions a minute; mean ef-

fective pressure 40 pounds per square inch. Leave all figures on the paper. 9. How would you scrape in a set of new main bearings and know when you have made a proper fit? 10. Make a sketch of the cylinder of a slide-valve engine, showing how the steam is admitted and discharged.

ENGINEER, ANY DEPARTMENT.

\$1,100 and more per annum, March 11, 1912.

Experience—Weight 2.

(See page 403.)

Practical Questions—Weight 3.

1. Explain a jet condenser. 2. How do you generate a direct current on a dynamo? 3. Explain a triple expansion engine. What advantage is it? 4. What horse power would the following engine develop: 8-inch by 12-inch cylinder, making 125 revolutions per minute, at 60 pounds mean effective pressure. Leave all figures on the paper. 5. How would you set the valves on a Corliss engine? 6. How do you set the steam valves on a Worthington pump? 7. Make a sketch of an indicator card of a high-speed engine and thoroughly explain it. 8. How much pressure will a boiler carry, $\frac{3}{8}$ -inch thickness, 72-inch diameter, tensile strength 56,000 pounds, percentage of seam 73 per cent; use a factor of safety of 5. Leave all figures on the paper. 9. A double-acting pump, 9-inch diameter, 12-inch stroke, making 70 strokes a minute; how many gallons will it throw in one hour? Leave all figures on the paper. 10. (a) Explain a surface condenser. What work does it perform? (b) What use is an air pump in connection with a surface condenser?

ENGINEER, ANY DEPARTMENT.

Less than \$800 per annum, July 10, 1912.

Experience—Weight 3.

(See page 403.)

Practical Questions—Weight 7.

1. How high would you carry water in a boiler with three gauge cocks? 2. What would you do if you should happen to find no water in glass or gauge cocks while operating the boiler? 3. What would you do if safety valve did not open until gauge showed 10 pounds above working pressure? 4. If boiler had gauge glass as well as gauge cocks, how often would you try the cocks? 5. How often should boilers be washed out? 6. What would you do to engine before starting it? 7. How would you leave engine at night, if fire were to be kept up in the boiler? 8. What would you do to take out a pound in the connecting rod? 9. How would you stop blowing steam around the piston rod? 10. Explain the operating of a slide valve in a steam engine?

ENGINEER, ANY DEPARTMENT.

\$800 to less than \$1,100 per annum, July 13, 1912.

Experience—Weight 3.

(See page 403.)

Practical Questions—Weight 7.

1. How much is the lowest gauge cock ordinarily above the top of the boiler furnace? 2. What would you do if you should happen to find no water in glass or gauge cocks while operating the boiler? 3. What is smoke and what causes it? 4. Explain the action of an injector for feeding boilers. 5. Explain the action of a condensing lubricator for engine cylinders. 6. Explain the operation of a slide valve in a steam engine. 7. Wherein does a com-

pound engine differ from a simple engine? 8. How would you detect a leak or blow in the piston packing? 9. How would you detect a leak or blow in slide valve? 10. Describe in detail the process of starting up engine in the morning.

ENGINEER, ANY DEPARTMENT.

\$800 to \$1,100 per annum, December 17, 1912.

Experience—Weight 2.

(See page 403.)

Practical Questions—Weight 8.

1. A horizontal tubular boiler 60-inch diameter, $\frac{1}{2}$ -inch thickness, tensile strength of metal 55,000, efficiency of seam 87 per cent., allow a factor of 5. What would be the safe working pressure? 2. How is electricity generated on a direct current machine? 3. Make a rough sketch of some open-feed water heater you are familiar with. 4. Make a sketch of a feed pump, showing both the steam and water end valves. 5. How would you put a new set of tubes in a water tube boiler? 6. Explain in full how you would set the valve on a Corliss engine. 7. Explain some steam trap; how does it operate and what are its uses? 8. Make a sketch of an indicator card taken off of an automatic cut-off engine and explain the same. 9. Explain a superheater and what are its uses; also explain a Green Economizer and what advantage is it? 10. Explain some engine governor you are familiar with and upon what principle does it operate?

ENGINEER IN CHARGE OF BOILERS,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.

\$1,500 per annum, March 1, 1912.

Experience—Weight 2.

(See page 403.)

Practical Questions—Weight 6.

1. How would you make a practical test of the ductility of a tube?
2. Make a rough sketch of a water tube boiler, showing all the connections and valves that are necessary.
3. (a) How would you remove the tubes from a boiler and put in a new set? (b) How would you bore or remove the scale from the tubes of the water tube boiler?
4. What would be the safe working pressure on a horizontal tubular boiler, 72-inch diameter, 20 feet long, thickness of metal $\frac{45}{100}$ inches, triple-riveted, double-butt strap, pitch of rivets $7\frac{1}{2}$ inches and $3\frac{3}{4}$ inches, size of rivets $\frac{7}{8}$ -inch; test of metal shows 58,000 tensile strength; allow a factor of safety of 5. Leave all figures on your examination paper.
5. (a) Where would you place a separator, and make a sketch of the same? What is its use? (b) Make a rough sketch of a steam trap; where is it placed and what work does it perform?
6. If you had to remove the fire-sheet of a horizontal tubular boiler on account of its being burned or weakened, and had to replace it with another, how would you do the work?
7. (a) Make a sketch of a feed pump, showing the interior construction of the steam and water end. (b) What use is a fusible plug and where is it put on a marine or furnace flue boiler? How is it constructed and what material is it made out of?
8. Explain a corrugated furnace and what advantage is it over a straight flue.
9. (a) Explain some automatic stoker you are familiar with. What advantage are they? (b) How would you make a thorough examination of

a boiler, both internal and external, so as to know its condition?

Report Writing—Weight 2.

Write a report to the Civil Service Commission, Philadelphia, reporting in full an evaporation test of a boiler which you have made. Do not sign your name to the report. Use your examination number instead.

ENGINEER (ON POLICE BOAT),
DEPARTMENT PUBLIC SAFETY, BUREAU OF POLICE.
\$1,200 per annum, December 17, 1912.

Experience—Weight 2.

(See page 403.)

Technical Knowledge—Weight 8.

1. Make a sketch of a Scotch marine corrugated furnace boiler, showing all its connections, explaining the same. 2. Explain both the surface and jet condensers in full. 3. Make a sketch of an indicator card taken off a low-pressure cylinder, and explain the same. 4. How many gallons of water would a single pump throw in an hour, having the following dimensions: 10-inch diameter, 12-inch stroke, double-acting; 70 strokes a minute, allowing 5 per cent. slippage. 5. Explain your air pump and what work does it perform? 6. Explain how you would scrape in the main pedestal bearings of your engine to take leads off of the same. 7. Explain your whole operation on starting up your engine, and how is the reverse valve motion arranged. Give a full explanation of some valve motion that you are familiar with. 8. Make a rough sketch of your thrust bearing and what use is it? 9. If your boilers got to foaming very badly, where you were using a surface condenser, where would you consider the cause of the trouble originated? 10. If you

were unable to maintain over 10 inches of vacuum, where would you look for the trouble, and would this be any disadvantage to your engine? If so, explain why?

PUMP ENGINEER, .

DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.

\$1,000 per annum, July 13, 1912.

Experience—Weight 3.

(See page 403.)

Practical Questions—Weight 7.

1. How much is lowest gauge cock ordinarily above top of boiler furnace? 2. Explain the action of an injector for feeding boilers. 3. How would you detect a leak or blow in the piston packing? 4. What is the difference between a jet and a surface condenser? 5. What is meant by slip of pump and how much is it in ordinary cases? 6. How much water per horse-power hour would you expect a good condensing engine to use? 7. How much foot pounds of work done in pumping water would you expect per 100 pounds of coal in a high duty condensing pumping engine? 8. How many pounds of water should a pound of good coal evaporate at 100 pounds pressure in a good water tube boiler? 9. How high can water be lifted in the suction line of a pump? 10. What vacuum in inches of mercury could you expect in a jet and in a surface condenser under ordinary operation?

STEAM HOISTING ENGINEER, ANY DEPARTMENT.

\$100 per month, or \$3.00 per day, October 14, 1912.

Experience—Weight 3.

(See page 403.)

Personal and Physical Fitness—Weight 2.

1. What is your age? 2. To what extent do you use liquor or cigarettes? 3. Have you ever been arrested? 4. Sanitary condition of person. 5. Physical fitness.

Practical Questions—Weight 5.

1. Name the appliances without which it would be unsafe to run a small boiler. What care does each need?
 2. How do you set a slide valve?
 3. Why does the inside of a boiler need cleaning? Flues?
 4. Describe the operation of an injector. What are some of the causes of its failure to work?
 5. In what ways does manila rope fail when running over a sheave or drum?
 6. About what load, in tons, are the following capable of carrying safely: 1-inch diameter manila rope; 1-inch diameter steel wire cable; steel chain of $\frac{3}{4}$ -inch diameter stock.
 7. What advantage has a friction drive over a positive drive, such as gearing?
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EXECUTIVE SERVICE

CHIEF OF BUREAU OF HIGHWAYS AND STREET CLEANING,
DEPARTMENT OF PUBLIC WORKS.

\$6,000 per annum, March 16, 1912.

Experience—Weight 6.

1. State extent of technical education and experience in: (a) Departmental organization. (b) Control of construction and maintenance of highways. (c) Development of cost data records. (d) Investigations and inspections covering the construction of roads and pavements and highway systems. Give in detail and state location of investigations and inspections. (e) All other kinds of municipal work. (f) Participation in organizations which consider the problems of municipal work and in contributing to the publications of said organizations.

Practical Questions—Weight 4.

2. Give briefly a proposed organization of the Bureau of Highways for the City of Philadelphia.
3. Assuming certain conditions to exist in the divisions of bridge

maintenance, sewer maintenance, street cleaning, ash and garbage removal, outline a plan for carrying out the work of these divisions. 4. State the various methods of using bituminous material in repairing an old macadam road which is subjected to a suburban and motor car traffic. 5. State the standard pavements in use at the present time, and specify the conditions for which each is best adapted. 6. State the principles underlying the collating of cost data and the application of same in such a way as to secure an economical administration.

CHIEF OF BUREAU OF LIGHTING,
DEPARTMENT OF PUBLIC WORKS.
\$2,000 per annum, July 11, 1912.

Experience—Weight 2.

(See page 215.)

Arithmetic—Weight 1.

1. An office had the following employees with attached salaries: Chief, \$2,000 per annum; 1 clerk, \$1,500 per annum; 3 clerks, each \$1,200 per annum; 1 messenger, \$1,000 per annum; 3 inspectors, \$1,300 per annum; 12 inspectors, \$900 per annum. The pay-roll, as made out for July, 1912, totaled \$1,973.66. Work out the individual salaries and the total amount for the month of July. If the pay-roll amount stated is incorrect, find the extent of the error? 2. The annual appropriation for a bureau was \$675,965 in 1910, and in 1911 that amount was increased 20 per cent. In 1912 Councils appropriated 25 per cent. less than the year before. What was the total amount appropriated for the three years? 3. Assume the following facts in connection with street lighting: Gas consumed per hour by single lamp, 8 cubic feet; gasoline consumed per hour by mantle lamp, .025 gallons; cost of gas, per 1,000 cubic feet, 80 cents; cost

of gasoline, per gallon, 12 cents. Calculate the cost of fuel for 4,500 gas lamps and 2,250 gasoline lamps for the month of April, 1912, if the lamps burn on an average of 10 hours. 4. Out of an appropriation of \$150,000, $\frac{2}{5}$ was used for salaries; $\frac{1}{4}$ for repairs; $\frac{3}{10}$ for new work; and the remainder for supplies. What amount was used for each purpose? What fractional part of the whole was used for supplies? 5. A contractor agrees to build a cellar which shall be 18 feet long, 16 feet wide, and 9 feet deep, inside measure, when completed. His contract price is \$0.62 per cubic yard for making the excavation, and \$1.25 a perch for building the wall. The wall is to be 2 feet thick (24.75 cubic feet = 1 perch of stone). What is the total received for excavating and for building? 6. 1,000 gas lamps on a certain street are equipped with tips consuming 8 cubic feet per hour, the City paying 85 cents per 1,000 cubic feet for gas. The tips are changed to mantle burners consuming 5.5 cubic feet per hour, and soon afterwards the gas company advances its charge to \$1 per 1,000 cubic feet. What loss or gain was made by the City on each hour's consumption of gas after the change?

City Information—Weight 1.

1. From what source is the gas obtained to supply the district covered by the 35th and 41st Wards? 2. Give the location of the gas plant referred to in question 1. 3. By what route is it reached from City Hall? 4. In what section of the City are the following: 1, Somerton; 2, Tacony; 3, Overbrook; 4, Paschalville; 5, Lawn-dale; 6, Branchtown; 7, Falls of Schuylkill; 8, Hestonville; 9, Tioga; 10, Wissahickon? 5. Name the main thoroughfares leading to or running through any five of the places mentioned in question 4. 6. Which is the largest ward in the City? 7. Name: 1, the president

of Select Councils; 2, the president of Common Councils; 3, the directors of the five City Departments, and tell over which Departments each presides. 8. Give the boundaries of the City of Philadelphia, its approximate area, and the present population. 9. Give the location of the main office and three district offices of the United Gas Improvement Company. 10. Name and locate five large office buildings in Philadelphia.

Practical Questions—Weight 4.

1. Point out defects in the present method of distributing and locating gas lamps, and suggest remedies for these defects. 2. In what parts of the City do (a) electric lights predominate? (b) gas lamps? (c) gasoline lamps? 3. Give the method of determining the candle-power of a gas lamp. 4. What office records would you keep in order to conduct the work of the Bureau of Lighting in a proper manner? 5. What is the actual difference in cost between the gas required for a 22 candle-power gas lamp and the gasoline required for a regulation mantle gasoline lamp for a period of 270 hours? 6. What is the agreement between the City and the United Gas Improvement Company in relation to (a) free lights; (b) tests of candlepower of gas; (c) penalties for failure to comply with the terms of the lease? 7. Specify certain sections of the city that are badly in need of improved lighting, and tell how you would proceed to secure the necessary improvement. 8. What relation has the character of the community or locality to number and kind of lights needed?

Report Writing—Weight 2.

Write a formal report of not less than 250 words to the Director of Public Works, Philadelphia, in response to a request from him for your views and recommendations on the use of gas and gasoline lamps as a means of

municipal illumination supplementary to electric arc lights. Discuss the use of each from an economical standpoint, the advantages and disadvantages of each, and your conclusions as to the desirability of one over the other under certain conditions. Sign this report "John Doe." In marking this subject, mechanical arrangement, adherence to the subject, expression and penmanship will be considered.

CHIEF OF ELECTRICAL BUREAU,
DEPARTMENT OF PUBLIC SAFETY.
\$6,000 per annum, July 15, 1912.

Experience—Weight 2.
(See page 215.)

Administration—Weight 2.5.

1. What system or method would you adopt to insure yourself that each employee in your jurisdiction is giving efficient service? 2. What system or means do you deem advisable to keep account of the receipt, distribution and use of supplies? 3. Discuss the relative importance of efficiency and economy, as applied to the Electrical Bureau. 4. If you were Chief of the Electrical Bureau, how would you proceed if the majority of the employees under your direction, including some important ones, were to strike on account of some alleged grievance? 5. What are the fundamental principles of what is called "scientific management," and the advantages claimed for it? Do you approve it or not?

Paper—Weight 1.5.

Discuss the relative advantages and disadvantages of the municipal ownership of electric plants for the lighting of the streets and public buildings, as distinguished from the contract system, in a city of the first class, and de-

scribe the most modern and efficient method of dealing with the subject. Not more than two hours to be devoted to this paper.

Practical Questions—Weight 4.

1. Describe briefly the various systems in general use for distributing electrical energy in cities of the first class for lighting and power purposes. Give briefly their relative advantages and disadvantages, including the life and fire risks.
2. Describe briefly the systems in general use for distributing electrical energy for traction purposes in cities of the first class and their suburbs.
3. Describe briefly how to determine whether underground pipes are in danger of being injured by the return currents from traction circuits. What are the usual methods of preventing electrolysis?
4. Describe briefly the construction of the more common systems of underground electric circuits (a) for low tension, (b) for high tension, including the street manholes, vaults, the character of the cables, method of laying them and subsequently testing them. What are the general standards of insulation?
5. Describe the different methods of arc lighting, both alternating and direct current, (a) the open and (b) the enclosed arc. State their relative efficiencies and economies as illuminants especially for street lighting, and how to determine the combined resultant illumination from different sources.
6. Describe the most modern system of fire alarm and police service in cities of the first class.
7. Define briefly: Kilowatt, kilowatt-hour, kilovolt-amperes, power factor, load factor, microfarad, megohm, lumen, lumens per watt, foot-candles, circular mil, phase difference, three-phase system, delta and star connections, lag, wattless current, three-wire system.
8. Describe the difference between water tube, return tubular, and internally fired boilers, stating their relative efficiency and freedom of danger from explosion.
9. De-

scribe the various differences between simple and compound engines as to their relative efficiency and economy in operation, naming standard types of each, and state how it would be possible to improve the efficiency and economy of each type and to what extent.

SECRETARY OF COMMITTEE ON COMPREHENSIVE PLANS,
MAYOR'S OFFICE.

\$2,500 per annum, December 2, 1912.

Experience—Weight 4.

1. Give a statement of your educational training, giving names of schools attended, with location; dates of attendance; courses pursued, and degrees, if any, conferred. In this connection it is desired that the applicant explain any courses of reading or other special courses that he has pursued. 2. Give a statement of your employments or business or professional experience, giving names of employers, nature of work, location, dates and reasons for changes made. It is also desired that the applicant set forth the annual income received from each employment, business or profession. 3. Give a more complete statement of any special preparation, employment, business or profession that you have had which, in your opinion, has direct bearing on the position for which you are now being examined.

Theses—Weight 3.

The applicant shall select at least two of the following theses. These theses will be marked upon the applicant's apparent grasp of the subject, his originality in his presentation of thought, and his ability, clearly and logically, to present his views. It is expected that the thoughts presented will represent the applicant's own ideas and research, and that proper credit will be given by quotation marks wherever the thoughts of others are used. 1.

How should a city spread and grow? In what ways will this expansion affect both the urban and suburban communities? 2. In the development of a comprehensive plan for Philadelphia, how can her public parks be made to serve the welfare of her people? 3. If, under existing conditions of transportation, the number of people reaching the vicinity of City Hall in a given time were doubled, what would be the result, and what plans would you institute to meet or to relieve this possible situation? 4. In the trend of current national enterprises, what factors should regulate the treatment of the water fronts and the water approaches of Philadelphia, and why? 5. How is Philadelphia fed? What bearing has the work of a Comprehensive Plans Committee upon this question?

JURAT.

(The following oath must be taken before a notary public, or other officer authorized to administer oaths for general purposes, and the officer's signature must be authenticated by official seal. If the oath be taken before a justice of the peace, or other officer who has no official seal, his official character must be certified by the clerk of the court, secretary of state, or other proper officer, under official seal.)

I, the undersigned, do solemnly swear (or affirm) that the accompanying statements made by me under the first subject are true to the best of my knowledge and belief, and that in the preparation of the accompanying theses under the second subject the composition is entirely my own, and that I have given full credit by quotation marks or reference to authorities for any quoted matter.

(Signature of competitor.)

Subscribed and sworn to before me by the above-named competitor, this day of.....
1912, at, county of
.....and state of

(Signature of officer.)

(Official title.)

(Official seal.)

(The official seal must not be omitted.)

*Judgment, Tact and Personal Fitness (Oral Test)—
Weight 3.*

SUPERINTENDENT, BUREAU OF CHARITIES,
DEPARTMENT OF PUBLIC HEALTH AND CHARITIES.
\$3,000 per annum. House accommodations, food, service,
light and heat free, February 16, 1912.

Experience—Weight 1.5.

1. State in detail your experience in executive institutional work. 2. What thought and study have you given to sociological subjects? 3. Have you had any managerial business experience? If so, where, in what lines of business, how long, and in what capacity? 4. Have you ever had the direction of, responsibility for, any large number of employees? If so, when and where, and of how many employees did you have charge? (See also usual questions on Experience, page 215.)

Arithmetic—Weight 1.

1. Your Chief Clerk submits the following as a part of his annual report:

Byberry Farms.

Subsistence	\$26,540 48
Fuel and light	5,577 39
Clothing	6,664 60
Drugs	124 49
Miscellaneous	8,552 36
Tobacco	1,161 53
Salaries	15,841 61
Wages	5,258 74

Total cost of maintenance	\$69,721 20
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Total cost of general repairs	5,621 73
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Total cost (gross)	\$64,099 47
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Is this correct?

2. Compute the per capita cost if the total for 102,924 persons is \$69,721.20. 3. Out of a total per capita cost of \$0.5568, \$0.5026 is spent for maintenance. What is the percentage? 4. Outline a comprehensive system of accounts, which will be at once concise and clear, for such

an institution as the Philadelphia General Hospital. 5. A trade discount of 15, 10 and 5 per cent. was allowed on a gross bill of \$765.45. What was the net amount?

Executive and Administrative—Weight 3.5.

1. What classes of applicants are not proper subjects for admission to the different departments of the Philadelphia General Hospital? 2. Upon whose order, and upon what conditions, are discharges from these departments made? 3. If, in an official capacity, you were taking charge of an institution new to you, what would be the first thing you would set out to do? 4. What is your understanding of the scope and meaning of the expression "sanitary condition" as applied to an institution of the kind and size of the Philadelphia General Hospital? State how you would make it so and keep it so. 5. Detail an executive arrangement by which you could keep yourself constantly informed concerning the affairs in your charge. 6. Having ascertained that the requirements of the Hospital and the output of vegetable supplies at the Byberry Farms were not economically inter-related last year, what corrective arrangement would you make with the farmer in charge at Byberry? 7. What can an executive in authority over a large body of various classes of employees, distributed in the various departments under his supervision, do to obtain the largest measure of their best service? 8. Discuss the necessity of a fire drill, and state how you would have it organized and conducted. 9. Outline in a general way what records of inmates or patients you would consider important to keep, and why. 10. Write a report to the Director of Public Health and Charities, City Hall, Philadelphia, on a case of alleged ill-treatment of a feeble-minded child—an inmate of the institution—that has been given considerable newspaper publicity. Give in detail your method

of investigation and your findings. Do not sign your name; use your examination number instead.

General Information—Weight 1.

1. Where are the following located: (a) Philadelphia General Hospital; (b) Byberry Farms; (c) Home for the Indigent; (d) the House of Correction; (e) the Eastern Penitentiary; (f) Moyamensing Prison; (g) the Episcopal Hospital; (h) the German Hospital; (i) the Municipal Hospital? 2. Write with some detail the purposes for which the Philadelphia General Hospital was established, and the nature of the work done in the various departments. 3. Give a brief statement of the nature of the work done at Byberry Farms. 4. Give an approximation of the daily average population of the Philadelphia Hospital, taken as a whole; that is, including all its departments. 5. State approximately the amount of money disbursed annually by the Superintendent. 6. From what sources is the money required for the maintenance, etc., of the Philadelphia Hospital derived? 7. What county borders Philadelphia on the side nearest Byberry Farms? On the side nearest the Philadelphia Hospital? 8. How would you go from the Philadelphia Hospital to Byberry Farms? 9. What is the approximate present population of Philadelphia? 10. Name the directors of the various City Departments.

Practical Questions—Weight 3.

1. What is the duty of the State or Municipality to the helpless, dependent, and irresponsible? 2. Make some suggestions on what government can do to lessen the number of such public charges? 3. What is your thought for the solution of the social problem presented by indigent inebriates? 4. Remembering that you have charge of individuals belonging to the classes mentioned above,

what attitude should be maintained toward them, and how will that attitude accord with that of a strict disciplinarian? 5. Discuss ventilation in a large institution such as the Philadelphia General Hospital.

FIRE SERVICE

Experience Sheet for Fire Service—Promotion.

1. Give the names and addresses of two reputable citizens who will vouch for the truth of your answers on this paper. 2. What is your age? 3. What schools (names and places) did you attend? If you did not finish grammar school, what was the highest reader you studied? How far did you go in arithmetic (fractions, decimals, practical measurements, percentage or interest)? If you attended high school or any other school after leaving grammar school, state where and how long, and what course you pursued. 4. When did you enter the Fire Department? Have you been out of the Fire Department any time since you entered? If so, why? What did you do during that time? Have you ever been suspended or demoted? When, why and how long? 5. Give, in order, the positions you have held, with dates and length of service in each and the districts you served in, since you entered the Fire Department. Have you ever served in any other organization of military or fire character? When, where and how long? When were you discharged? 6. Give, in order, any positions you have held before entering the Fire Department, with the names and addresses of your employers, character of business, length and dates of your employment, duties of your position, and salary received in each case. 7. If you have been in business for yourself, state the nature of the business, how long, and the average yearly income. 8. Give the names and addresses of three citizens whom you are willing to have consulted as reference.

CAPTAIN (PROMOTION),
DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.

\$1,400 per annum, October 22, 1912.

Experience—Weight 2.

(See page 424.)

City Information—Weight 1.5.

1. Give the names and title of every official in the Bureau of Fire whose rank is above a foreman (or captain). 2. State the number of men in each rank from foreman (or captain) down. 3. Give the location of the following engine companies: Engine Company No. 1, 4, 6, 12, 14, 19, 28, 35, 40, 47; Fire Truck No. 1, 4, 6, 12, 14; Chemical Engine No. 1, 4, 6; Insurance Patrol No. 1; Water Tower No. 1. 4. Locate the following hospitals: Jefferson, Presbyterian, St. Agnes, Episcopal, German. 5. Name the streets crossing Broad street between 500 south and 1200 north, inclusive, on which street cars run west.

Personal Fitness—Weight 2.

1. Tell how a person may become a hoseman in the Bureau of Fire? 2. What qualifications as to citizenship, residence and education are required by law for hoseman? 3. What type of man, physically, intellectually and temperamentally, do you consider the ideal for a member of the Bureau of Fire? 4. Outline the duties of a foreman on the fire ground. 5. Is your health good? Have you been sick for any length of time since you became connected with the Bureau of Fire? If so, what was the disease? How long were you sick? 6. Personal appearance.

Practical Questions—Weight 2.5.

1. One of the duties of a foreman is to see that the station is kept clean and in a healthy condition. Explain

fully what you understand by the expression "clean and healthy condition," and how you would make it so and keep it so. 2. What do you understand by the term "discipline"? Mention the factors which must be in evidence in a well-disciplined force. Of what advantage is it? What would be your attitude toward the men under you in order to develop and maintain it? 3. Describe the distinguishing feature of a Silsby engine. 4. Explain in detail the sending of an alarm from a box and its receipt at a fire station. 5. Where is a foreman's proper place when in service on a fire ground? 6. What is the object of the High Pressure Fire Service? What sections of the City are now covered by it, and where are the pumping stations located? What are its advantages over the portable engine service in ordinary use? What makes its universal use impracticable? 7. If you found a member of your company, while on duty, under the influence of liquor, what would be your duty? 8. Describe in detail the operation of the fire extinguisher in front of the Examination Room. 9. Give a complete list or catalogue of the supplies, apparatus, and appliances that should be found in a fully equipped modern fire station. 10. What is meant by "ventilating" a building? What is its purpose and how may it be done?

Report Writing—Weight 2.

In the absence of the Chief Engineer and the Assistant Engineer, your company fought a fire under your personal direction. Write a report, not to exceed 200 words in length, to the proper official, giving all the facts. Assume these facts from the receipt of the alarm to your reporting back at the station. Sign this report "John Doe." Mechanical arrangement, adherence to the subject, and expression, spelling and penmanship, will be considered in marking this subject.

DRIVER (PROMOTION),
DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.
\$1,100 per annum, October 23, 1912.

Experience—Weight 3.
(See page 424.)

City Information—Weight 2.

1. Locate the first ten engine companies' stations. 2. What route would you take from your station in responding to an alarm at Twelfth and Market streets? 3. In what direction do the trolley cars run on the following streets: (a) Third street; (b) Eighth street; (c) Eleventh street; (d) Twelfth street; (e) Fifteenth street; (f) Jefferson street; (g) Lehigh avenue; (h) Snyder avenue; (i) Tasker street; (j) Germantown avenue? 4. At or near the junction of what numbered street does Ridge avenue cross: (a) Fairmount avenue; (b) Columbia avenue; (c) Lehigh avenue. 5. Locate the following buildings: (a) Real Estate Trust Building; (b) Record Building; (c) Lyric Theater; (d) Bourse Building; (e) Jewish Hospital.

Personal Fitness—Weight 2.

(Oral.) 1. What qualifications should the driver of an engine or truck possess? 2. How soon after the receipt of an alarm should a driver of an engine be able to drive out of the fire station? 3. What is the proper method of transportation for members of a fire station in going to or returning from a fire? Are any deviations from this method permissible? 4. Is any greater care required in driving a truck than an engine? Explain. 5. Is your health good? Have you been sick for any length of time since you became connected with the Bureau of Fire? If so, what was the disease? How long were you sick? 6. Personal appearance.

Practical Questions—Weight 3.

1. Describe the process of cleaning a horse, the implements used, and tell how often it should be done. 2. What kinds of feed, and how much of each kind should a fire horse have daily? 3. What precautions must be taken in feeding and watering a horse? 4. What exercise for fire horses is prescribed by the book of rules? Why should the horses be regularly exercised? 5. Mention some of the more common complaints of fire horses, and tell how you would treat them. 6. Mention the parts of a harness. 7. Tell how you would properly care for harness. 8. What care should a driver take while driving an engine to a fire, and what type of paving is most slippery when it is wet? 9. What is a driver's duty on a fire ground? 10. By whom and how is fuel for an engine brought to a fire?

ASSISTANT ENGINEER (PROMOTION),
DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.
\$2,000 per annum, July 26, 1912.

Training and Experience—Weight 5.

Any false statement made by the applicant in answering these questions will be regarded as good cause for excluding him from the eligible list, or for removal or discharge during probation or thereafter. 1. Where were you born and when? 2. Name the schools you attended and state the time spent in each. Give the courses of study, if any of said schools were above the grammar school. 3. What was your occupation before you entered the Fire Bureau? State where you worked, for whom, and how long for each. 4. Did the work you performed in any of the trades or occupations above enumerated bring you in touch with any phase of the work done by the Bureau of Fire? If so, in what way? 5. How long

were you a hoseman? Give dates. To what stations were you attached and how long at each? Name ten (10) fires you helped to fight as hoseman? 6. When did you become an assistant foreman? To which fire stations were you attached, and how long at each? Name ten (10) fires you helped to fight as assistant foreman. 7. When were you promoted to the rank of foreman? Of which fire stations have you had command, and how long at each? Name ten (10) fires at which you were present in the capacity of foreman. 8. Have you ever had complete command at any fires? If so, state about how many, and mention the most important. 9. Have you ever been present at what may be called a large fire, in any capacity, since you entered the Bureau? If so, what fires were they, and in what capacity did you serve? State fully. 10. Have you to your credit on the records of the Bureau any acts of bravery performed in the line of your duty? Have you ever been commended by your superiors for any such act? If any, state how many instances there were and what was the occasion for each. 11. Have you ever been disciplined for any inattention or dereliction of duty or insubordination, or have any charges ever been brought against you? State when this occurred, if at all, and for what reasons.

Personal Fitness—Weight 2.

(Oral.) 1. How many district engineers are there in the Bureau of Fire? Name them. 2. Mention the more important duties of the district engineers. 3. Under whose control and direction was the work of the Bureau of Fire done prior to the establishment of the Bureau? 4. When was the Bureau of Fire established? 5. In round numbers, how many men are connected officially with the Bureau of Fire? What ranks are there? 6. In fighting fires, the work of the engine is extremely important, and

its care and efficient operation is essential. It is therefore desirable that the best men obtainable should be secured as engine men. What, in your judgment, could be done to develop a higher grade of efficiency in engine operation, and would it be preferable to appoint enginemen from the ranks or from the outside? Discuss this point and give reasons for your views. 7. In the event of a fire, would it be preferable to have two 1-inch streams of water available, or one 2-inch stream? If so, in what cases or under what conditions? Which throws the greater amount and how much? 8. Mention five specific and distinct acts which an assistant engineer might order a fireman to do during the progress of a fire. State what kind of a man you would select for each duty, and give your reasons for such selections. 9. Is your health good? Have you been sick for any length of time since you became connected with the Bureau of Fire? If so, what was the disease? How long were you sick? 10. Personal appearance.

Knowledge of Duties and Administration—Weight 3.

1. In general, it is the purpose and function of the Bureau of Fire to lessen losses at fires. State what means, methods or regulations, municipal or otherwise, are in use in Philadelphia which are intended to minimize the number of fires, or to prevent them. 2. State what changes, if any, you would suggest as desirable. 3. Write what you know about the operation of the High Pressure System, its installation, plants and area covered, and discuss its efficiency as compared with the old methods in the districts in which it is used. 4. As assistant engineer in command of a part of the fire-fighting force of the City, what steps would you take, and what methods would you inaugurate and pursue to improve the discipline and general efficiency of the men in your district? 5. You have

just returned from a large fire at which you had full command in the absence of the chief and deputy chief engineer. Write a report to your superior officer containing in detail all matters that such a report should properly contain. Sign this report "John Doe." 6. What types of engines are in use in the bureau? What are their distinguishing features? How do they differ in operation, and if any, what are the points of superiority of one type over the others? 7. Discuss the proposition of the introduction of automobile or self-propelled fire apparatus, giving your views on the economy, efficiency and reliability, as well as the feasibility of the project. 8. Mention the special fire-fighting appliances which should be installed in a large department store in the center of the city, and explain how each could be used, and what use the foremen may make of them in addition to their own apparatus.

FIREMAN (PROMOTION),
DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.
\$1,100 per annum, October 29, 1912.

Experience—Weight 3.

(See page 424.)

Personal Fitness—Weight 2.

(Oral.) 1. In your estimation, is any hoseman qualified to act as fireman? If so, why? 2. What additional qualifications do you think he ought to possess? 3. How many pounds steam pressure must be maintained in the boilers of the engine at all times? 4. How long should it take a fireman to get up sufficient steam to run the engine at full load and efficiency? 5. Is your health good? Have you been sick for any length of time since you became connected with the Bureau of Fire? If so, what was the disease. How long were you sick? 6. Personal appearance.

Practical Questions—Weight 5.

1. Tell how you would start a fire in an engine such as is used in the Bureau of Fire. What objection is there to a thin fire? A thick fire? 2. Explain how you would keep the fire going on the fire ground so as to produce the required results. What is the quickest way to dampen the fire? 3. What kind of fuel is used in fire engines? Why? How much would be used per hour at full blast? 4. How do you know that your fire is producing the desired results? What are these results? 5. Name the principal parts of a fire engine and tell what any three of these parts are for. 6. If the results are not produced, who could probably tell you where the fault lay, and give you proper instructions? 7. Why must oil be used in running an engine? 8. What other duties connected with the engine is the fireman expected to perform? 9. What kind of pumps are used in the City's fire engines, and tell what difference there is between them? 10. How is the water level in a boiler indicated? What might cause its failure to work properly?

HOSEMAN,

DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.

\$900—\$1,000 per annum, October 26, 1912.

Arithmetic—Weight .5.

1. Add: 76,854, 68,956, 3,768, 47,683 and 62,143. 2. If a man has \$8,768.45 and spends \$2,976.38, how much has he left? 3. If the average number of alarms at each fire station for a year is 178, what is the total number of alarms received during that year at 48 stations? 4. Divide 3,015 by 45.

City Information—Weight 1.

1. Name the following and tell whether they were elected or appointed: (a) Director of Public Safety, (b) Chief of the Bureau of Fire, (c) City Treasurer, (d) Coroner, (e) Sheriff. 2. In what directions do the cars run on: (a) Morris street? (b) Walnut street? (c) York street? (d) Fifth street? (e) Thirteenth street? 3. Where are these buildings located: (a) Land Title Building? (b) Odd Fellows' Temple (now Parkway Building)? (c) United States Mint? (d) Boys' Central High School? (e) Cramp's ship building plant? 4. In what direction is City Hall from (a) Chestnut Hill? (b) League Island? (c) Camden? (d) Frankford? (e) Manayunk? 5. What street is 200 north? What street is 700 north? What street is 2200 north? What street is 800 south? What street is 1800 south? 6. What streets cross Germantown avenue at or near (a) Fourth street? (b) Tenth street? (c) Eleventh street? (d) Broad street? (e) 5700 north? 7. Mention five common causes of fire in this City.

Memory Exercise—Weight 2.

Reproduce the following (this was read aloud to the applicants twice):

1. Foreman Murray, of Fire Station No. 12, at Main and Centre streets, Manayunk, orders Mr. Fox, a Hoseman at his station, to take a $1\frac{1}{2}$ -inch nozzle, an axe and a fire net to Foreman Carr, of Fire Station No. 17, at 253 North Fifteenth street. He is to get a receipt for the articles and ask him to return them within a week. Mr. Fox is ordered to take Ridge avenue cars in both directions.

Penmanship—Weight .5.

The mark for penmanship will be given on the writing in the report.

Physical Test—Weight 5.

This subject will be marked and graded by Dr. Muller.

1. Name of applicant? 2. Residence? 3. Age—Years? Months? 4. Height—Feet? Inches? 5. Weight? (The requirements for height, weight and age shall be as follows: Minimum height=5 feet 8 inches. Weight=135—188 pounds. Age=22 to 37 years. Minimum weight increases at the rate of 5 pounds per inch in height, and maximum weight increases at the rate of 9 pounds per inch.) 6. Girths—Girth of chest expanded, at ninth rib, inches? Contracted, inches? Girth of abdomen, normal, inches? 7. Strength test—Strength of back (average 300 pounds)? Legs (average 350 pounds)? Chest—Push and pull (total average 175 pounds)? Forearms (average both 175 pounds)? Total, pounds? (Reject if the total strength falls below 1,000 pounds.) 8. Teeth—Are the teeth insufficient or defective? (There must be at least two molar teeth to each jaw, on each side, in good condition. Jaws must be free from badly broken or decayed teeth so far destroyed as to render filling or crowning impossible. Missing teeth may be supplied by crown or bridge work or a good plate. At least twenty natural teeth must be present.) 9. Hands—(Reject for loss of thumb or any part thereof, loss of forefinger, loss of distal phalanges of any two fingers.) 10. Feet—(Reject for severe flat foot or broken down arch, bunions, if large or inflamed, ingrowing toe nails; reject for loss of great toe or other toes, any malformation sufficient to impair walking.) 11. Spine—Is the spine crooked or irregular? (Reject for serious deviation or rigidity.) 12. Ears—(Reject if less than 6-12 hearing in both ears, except where impacted wax is present. Tested with tuning fork, 200 vibrations.) 13. Eyes—(Reject if vision is below 15-20 for one eye and 15-50 for other, or 15-20 for both.

Note partial or complete color blindness, tested with the lantern test.) 14. Lungs—Are there any indications of disease of the organs of respiration? On inspection? Percussion? Auscultation? 15. Heart—Are there any indications of disease of the heart or blood vessels? On palpitation? Auscultation? Pulse rate, lying? Standing? After exercise, 50 steps, stationary running? Blood pressure, lying? Standing? 16. Skin—(Reject for any parasitic or contagious or serious form of skin disease.) 17. Scars; stiff, painful or enlarged joints; deformities or malformations? (Give full particulars when present, and reject if they impair usefulness.) 18. Hernia—(Reject for all forms.) 19. Varicose veins, haemorrhoids, fistula in ano, or hydrocele—(Reject when present.) 20. Venereal diseases—Are there any evidences of gonorrhea or syphilis present? (Reject for any discharge, swollen glands, or other evidences of venereal infection.) 21. Urine—Specific gravity? Albumen? Sugar? (Postpone if traces of albumen only are present. Reject if albumen persists.) 22. Vaccination—Has the applicant been successfully vaccinated? (Postpone until vaccinated, if necessary.) 23. Alcohol or drug or tobacco—(Reject for excessive use.) 24. Remarks.

Report Writing—Weight 1.

Write a letter to the Civil Service Commission, Philadelphia, stating what action you would take if you saw several boys tampering with a fire box. Sign the letter "John Doe."

HOSEMAN,

DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.

\$900—\$1,100 per annum, February 19, 1912.

Arithmetic—Weight .5.

1. A coal merchant sold 647,498 tons on Monday, 354,710 tons on Tuesday, 985,521 tons on Wednesday, 307,205
28 cs

tons on Thursday, 421,011 tons on Friday, and 125,000 tons on Saturday. How many tons did he sell in the week? 2. The population of a certain city is 948,620, and that of another is 317,405. What is the difference? 3. If an oil well produces 7,348 gallons a day, how many will it produce in 906 days? 4. If 783,066 stones are divided into 6,869 equal heaps, how many stones will be in each heap?

City Information—Weight 1.

1. Of the following officials of the City and County of Philadelphia specify those appointed and those selected, and give their names: (a) The Mayor, (b) the City Solicitor, (c) the Civil Service Commission, (d) the Controller, (e) a Judge of Common Pleas Court. 2. In what direction do the cars run on Sixth street? Chestnut street? Dauphin street? 3. Where is the United States post office (main office)? Baldwin Locomotive Works? the high-pressure fire main station? Give the locations of five fire stations in Philadelphia. 4. In what direction from City Hall is the Market street ferry? Lemon Hill? 5. How many hundred north is Callowhill street? Fairmount avenue? Girard avenue? How many hundred south is Spruce street? South street? Washington avenue? 6. Mention three materials which you consider dangerous to store in large quantities in buildings because of their inflammable nature and consequent danger of fire. 7. What kind of a man do you think a Hoseman should be?

Memory Exercise—Weight 2.

Reproduce the following (this was read aloud to the applicants twice):

A telephone message from headquarters at 1328 Race street has just come in at Fire Station No. 20, located at 10th and Hunter streets, asking Foreman Baker to report in person at once to the Chief of the Bureau of Fire. He is to bring with him a statement of all the fire apparatus

he has at the station, the condition of the same, a list of all the employees under his command and the names of all who are absent on account of sickness or other reasons. The Assistant Foreman is to have command during the Foreman's absence.

Penmanship—Weight .5.

Make a copy of the following in your best handwriting:

This you will perceive is an extremely interesting statement, and the first time I believe it has ever been made. It will show the citizens of this City just what they are receiving from the public utilities companies, through your Department.

Physical Fitness—Weight 4.

(See page 434.)

Report Writing—Weight 2.

Write a letter to the Civil Service Commission, Philadelphia, stating what you would do if on your way home to-day you saw large volumes of smoke coming out of the upper windows of a store building on Market street. Do not sign your name to this letter; use your examination number instead.

LIEUTENANT (PROMOTION).

DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.

\$1,250 per annum, October 21, 1912.

Experience—Weight 2.

(See page 424.)

City Information—Weight 1.5.

1. How many of each of the following are there now in the Bureau of Fire: Engine companies? Hook and ladder companies? Chemical engine companies? Fire boats? Water towers? 2. Name the Directors of the City Departments and specify the Departments. 3. Locate the follow-

ing: Engine Company No. 2, 5, 7, 9, 10, 16, 21, 22, 50, 53. Fire Truck No. 3, 5, 8, 10, 13. Chemical Engine No. 3, 5, 7. Insurance Patrol No. 2. Police Boat "Ashbridge." 4. Locate the following hospitals: 1, Stetson Hospital; 2, Hahnemann Hospital; 3, Philadelphia Hospital; 4, St. Joseph Hospital; 5, Methodist Hospital. 5. By what main thoroughfares can City Hall be most directly reached from: 1, Manayunk; 2, Germantown; 3, Frankford; 4, Darby; 5, Overbrook; 6, League Island?

Personal Fitness—Weight 2.

Oral.—1. Name the last two Chiefs of the Bureau of Fire. 2. Name the last four Mayors of Philadelphia. 3. What qualifications, other than those possessed by a Hoseman, do you consider essential in a Lieutenant? 4. If, at a fire, a hose should burst while in service, what should be done? Assume at least two breaks from different causes and tell how such occurrences might have been prevented. 5. How is fuel brought for the engine's use at a fire. Whose duty is it to do this? 6. Is your health good? Have you been sick for any length of time since you became connected with the Bureau of Fire? If so, what was the disease? How long were you sick? To what extent, if any, do you use tobacco in any form, or liquor? 7. Personal appearance.

Practical Questions—Weight 3.

1. Whom would you hold responsible for the proper care of the harness used, and tell how you would have them cared for and treated? Why should harness be kept in first-class condition? Mention some results of carelessness in this particular. 2. What is the duty of the officer in charge with respect to persons visiting the fire station? 3. If your Foreman should turn over to you, for instruction, a man who had just been appointed Hoseman, state in detail your full duty in the case, and mention all the

matters in which you would instruct him. 4. What is a "false alarm" and what may cause such an alarm to be received? In such cases, what is the duty of a member of the Bureau of Fire? 5. Mention three of the most common dangers to which members of the Bureau of Fire are exposed while on the fire ground, and tell how each may be guarded against. 6. Under what conditions do the rules permit a commanding officer of a company to go to one fire direct from another? 7. In what order should the vehicles and apparatus at a fire station proceed to a fire in answer to an alarm? In returning from a fire how should two engines proceed along the same street? 8. State what care should be taken in the use of hose on the fire ground, after a fire, on returning to the station; and how to insure its preservation for the longest possible time. Tell what neglect, carelessness and inattention would cause deterioration and destruction of the fire hose. 9. What is meant by "watch duty"? What are the hours of watch duty? What are the duties of a man on watch? 10. Section 37 of the rules requires the following: "Familiarize himself with the character of buildings in the vicinity of his station." Explain what you understand this to mean, how it can be done, what useful information you would try to get, what purpose such familiarity would serve and what advantage it would be to you.

Report Writing—Weight 1.5.

While temporarily in charge of your fire station, a serious breach of discipline occurred among the men. Write a full report of the matter to your Foreman, giving all the details, your action in the matter at the time, and any further recommendations you may desire to make. Assume the facts necessary to write a report of about 150 words. Sign the report "John Doe." Mechanical arrangement, adherence to the subject and expression will be considered in marking this subject.

TILLERMAN (PROMOTION).

DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.

\$1,200 per annum, October 23, 1912.

Experience—Weight 3.

(See page 424.)

Personal Fitness—Weight 2.

Oral.—1. What qualifications other than those required in a Hoseman should a Tillerman possess? 2. What kind of a man should a Tillerman be physically? 3. Have you good eyesight? Can you read the letters on the card? 4. What difficulties present themselves in turning a corner with a truck? 5. Is your health good? Have you been sick for any length of time since you became connected with the Bureau of Fire? If so, what was the disease? How long were you sick? Personal appearance.

Practical Questions—Weight 5.

1. Describe in detail a fire truck. 2. Tell what apparatus is carried on a truck. 3. What is the reason for having a tiller and tiller wheel on a truck? 4. What work does a Tillerman perform while on a truck? 5. Would an automobile truck require a Tillerman? 6. What should a Tillerman do upon arriving at a fire? 7. What is his duty during the progress of a fire? 8. How are the metal parts of a truck kept clean and bright?

ENGINEMAN (PROMOTION).

DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.

\$1,200 per annum, July 23, 1912.

Experience—Weight 3.

(See page 424.)

Practical Questions—Weight 7.

1. Make a rough sketch of the boiler on the fire engine.
2. How would you put a new set of valves in the water end

of a reciprocating pump? 3. Explain in full how your piston and rings are constructed on your steam end. 4. How would you pack your piston rods and valve on your steam pump? 5. If your boiler got a foaming, what would you do? 6. Explain how you test your toe pieces and know they are tight? 7. Explain in full how your feed pump is constructed and if it should break down how would you get water into your boiler. 8. How would you clean your boiler and get the scale out? 9. What use is the by-pass on the water cylinder? 10. Explain a rotary engine; also explain the plunger pump.

INSPECTION SERVICE

Experience Sheet for Inspection Service.

1. Give the names and addresses of two reputable citizens who will vouch for the truth of your answers on this paper. 2. What is your age? 3. What grammar school (name and place) did you attend? (a) Did you complete grammar school? If not, how long did you attend? 4. What high school did you attend? (a) What course did you take? (b) Did you complete the course? If not, why not? (c) What technical school did you attend? 5. What is your trade or chief occupation? (a) What training did you receive for it? (b) How long did you follow it? 6. State in order of time the positions you have held, giving the dates, names and addresses of your employers; the nature of your work; salary received and reasons for leaving, in each case. 7. Give the names and addresses of your employers whom you would be willing to have consulted as references. 8. If you have been in business for yourself, state the nature of business, how long, and average yearly income.

INSPECTOR OF BUILDINGS (BRICKLAYER),
DEPARTMENT PUBLIC SAFETY,
BUREAU OF BUILDING INSPECTION.
\$2,000 per annum, July 8, 1912.

Experience—Weight 5.

1. How long have you been continuously engaged in this business? 2. In what position: Contractor, Foreman, Journeyman. 3. State about how your time has been divided as to erecting new buildings, alterations and general jobbing. 4. Since engaging in business, what experience have you had in the erection of new buildings and in what position? Name the principal buildings you erected and the position you occupied in the erection of buildings as constructor, foreman or journeyman. 5. In the alteration of buildings, give your experience in this line, name the principal buildings you altered, the extent and nature of the alterations and in what position you were employed and for what length of time in the alteration. 6. What experience have you had in the underpinning of walls? Give location of the most important work you have done in this line of work, your position on the work and for what period of time. 7. In taking out walls and replacing with girders to carry overhead walls and floors what experience have you had? Name some of the most important jobs of this kind you had and in what position were you employed and for how long. 8. Give particulars of any work on which you were employed and in what capacity that required in your estimation a thorough knowledge of the building business. Give location and name of building.

Practical Questions—Weight 5.

1. What are the duties of a Building Inspector? 2. Give the proper constructions of a cellar or foundation wall on ordinary dwelling, the quality of stone to use, how

laid and bonded, proportions and kind of materials used in mortar. 3. Give in detail quantity and quality of ingredients to be used in making lime, mortar, cement mortar, and lime and cement mortar. Give the proportion of cement, sand and stone used for concrete foundations. 4. In building brick wall, how often should it be bonded and name or illustrate the different bonds used in brick work in rough and finished or faced brick work. 5. How would you build a chimney on ordinary dwelling, size of flue, thickness of wall and height above roof? 6. Give the minimum thickness of walls for dwelling 20 feet front and under, not over 35 feet high, 60 feet deep. 7. Give the pressure allowed per square foot in concrete, brick work and lime mortar and brick work in cement mortar. 8. Describe buildings of the first, second and third class, and give location of some buildings of each class in Philadelphia. 9. Give description of tower fire escape and how constructed and when and where tower fire escapes are required. 10. Give the load allowed in the following kinds of soil per square foot, sand and loose gravel, hard dry clay, hard gravel.

INSPECTOR OF BUILDINGS (CARPENTER),
 DEPARTMENT PUBLIC SAFETY,
 BUREAU OF BUILDING INSPECTION.
 \$2,000 per annum, July 8, 1912.

Experience—Weight 5.

(See page 442.)

Practical Questions—Weight 5.

1. What are the duties of a Building Inspector? 2. Give specifications for cellar or foundation walls for ordinary dwelling 20 feet front, the quality of stone to be used, how laid and bonded and the proportions and kind of materials used in mortar. 3. Give in detail the propor-

tions of lime mortar, cement mortar, and lime and cement mortar, and describe the quantity and quality of the ingredients. Give the proportion of cement, sand and stone in concrete foundations. 4. Give the minimum thickness of walls for dwellings 20 feet and under, not over 35 feet high and 60 feet deep. 5. Describe buildings of the first, second and third class and give location of several buildings of each class in Philadelphia. 6. Give the load allowance per square foot on the following kinds of soil; sand and loose gravel, dry hard clay, hard gravel. 7. How much space must be allowed between any joist, girder, or timber, and the outside of wall enclosing a smoke, hot-air or other flue? 8. Describe the framing of timbers for trimmers for floor openings in buildings except dwellings. 9. Give minimum thickness for joists, their bearing on walls, distance apart, and when and how bridged, and when doubled. 10. Give the safe load per superficial foot in floors for dwellings, hotels, office buildings, public halls, retail stores, storehouses, warehouses and factories. 11. Give size and material for lintels for openings from 4 to 8 feet wide. 12. Calculate the size of yellow pine girder required to safely carry a uniformly distributed load of 37,800 pounds over clear span of 18 feet. 13. Under what conditions can you build a projecting bathroom from upper story? Give size of same, distance from a similar structure, and how covered. 14. In changing a three-story corner dwelling (18 feet front by 40 feet deep with 9-inch walls, roof and floors carried on party and side walls) into a store, with openings for bulks 15 feet clear, corner door entrance carried on girders and cast iron post. Give the approximate weight to be carried respectively by the front and side girders. Height of second story 10 feet, third story 9 feet, joists 3 by 10, rafters 3 by 8. Two windows on each front of second story, each 3 feet wide by 6 feet high, and two windows on each front on third

story, each 3 feet by 5 feet 6 inches. Window openings on both fronts placed same distance from corner and directly over the bulk front openings with brick pier between windows. Give sketch and size of shoring required.

INSPECTOR OF BUILDINGS (CIVIL ENGINEER),
DEPARTMENT PUBLIC SAFETY,
BUREAU OF BUILDING INSPECTION.
\$2,000 per annum, July 8, 1912.

Experience—Weight 5.

(See page 442.)

Practical Questions—Weight 5.

1. Define modulus of elasticity; dead load; live load; modulus of rupture; factor of safety; tension; shearing strain; compression; transverse strain; torsion. 2. Give the bearing power per square foot of soils usually encountered in and around Philadelphia. 3. Make a rough sketch of a three-story mill construction factory building constructed in accordance with rules of Philadelphia Building Department, same to be 40 feet wide, 150 feet long. Basement to be 8 feet, first floor 14 feet, second and third floors 12 feet. Show size of beams, girders, columns, thickness of walls, location of stairway and fire tower. Live load to be 120 pounds per square feet. 4. What size and thickness cast iron column, whose length is 12 feet, will be required to support a load of 175 tons? 5. Design a rivet plate girder which has a clear span of 35 feet and supports a uniformly distributed load of 125,000 pounds. 6. What are the duties of a Building Inspector? 7. What is a fire tower? Make a rough sketch, showing at least two different designs.

CHIEF ELEVATOR INSPECTOR,
DEPARTMENT PUBLIC SAFETY,
BUREAU OF ELEVATOR INSPECTION,
\$3,500 per annum, July 18, 1912.

Experience—Weight 2.

(See page 441.)

Administration—Weight 2.

1. Formulate an ordinance to be submitted to Councils embodying such matters as you would suggest for the improvement of the work of the Bureau of Elevator Inspection. 2. Outline an efficient organization of the Bureau of Elevator Inspection, so that the work of the Bureau could be promptly and properly handled. 3. Give in detail the system of records you would keep as Chief Elevator Inspector and include a method by which you could keep in direct touch with the work done by each of your subordinates and which would be sufficiently accurate to form a basis for efficiency ratings of employees.

Knowledge of Ordinances—Weight 2.

1. What information must be submitted to the Bureau along with the application for permits to erect an elevator? 2. State the minimum factor of safety required: (a) For pressure tank. (b) For drum shaft and overhead supports. (c) For other parts of a passenger elevator affected by the load. 3. Tell what elevators are classed as "passenger elevators." 4. What regulations must be observed with regard to counter-weights and their use? 5. After first inspection how frequently must inspection be made: (a) Of power-driven elevators? (b) Of hand hoist elevators? (c) Of pressure tanks? 6. Describe the test required to show the efficiency of the safety device, before a certificate is issued. 7. What are the allowable loads for the following sizes of ropes and drums:

Size of rope	Minimum diameter of drum or sheaves	Maximum load on one rope	
		Passenger	Freight
$\frac{1}{2}$ inch	20	—	—
$\frac{3}{4}$ inch	30	—	—
1 inch	40	—	—

8. What is the maximum allowable speed of passenger elevators? 9. Summarize the principal purposes and provisions of the Act of Assembly approved May 28, 1907, relating to elevators. 10. Give in detail the course that any person who may feel aggrieved by the decision of any elevator inspector may take according to the provisions of an ordinance providing for a Bureau of Inspection of Elevators, approved April 15, 1908.

Practical Questions—Weight 4.

1. Describe a hand-power operated elevator, both as to hatchway work and the mechanism operating the car, and how is the speed of this type of elevator regulated? 2. Concerning belt elevators: 1, State what a belt elevator is; 2, what would be the result if the belt should break on the down motion? 3, What would be the result if the belt should break on the up motion? 4, What is the best arrangement of shipper cable for a belt elevator and how should it be rigged? 5, How is the reverse motion obtained? 3. What is an electric brake and how operated? 4. Concerning switches tell: 1, What is a limit switch? 2, What is a potential switch? 3, What is an emergency switch? 5. If a cushion is designed and built to meet the test required by the City, what would be the result if the car were to fall from a point three-quarters of the way up the hatch with a light load, say, two people, in the car? 6. Could an accident so happen that the conditions would be the same in reality as the air-cushion test required by the City? 7. Describe a shackle fastening and describe

how the cables should be secured. 8. What kind of gates are required for freight elevators? 9. What is the difference between a full automatic gate and a semi-automatic gate? 10. Describe automatic hatchway doors and tell where they can be used in the City of Philadelphia. 11. State two ways of operating car safeties and describe each operation. 12. What is an interlocking gate device and name two types and describe each? 13. What is meant by the gear of a hydraulic elevator? 14. What is a pilot valve? 15. Where should the safety valve be located for a hydraulic elevator pumping plant? 16. What is meant by overbalance? On what type of elevators is it used and why is it used?

CHIEF MEAT AND CATTLE INSPECTOR (PROMOTION),
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$1,350 per annum, July 19, 1912.

Experience—Weight 3.

(See page 215.)

Practical Questions—Weight 7.

1. Define the principles upon which you would base a rule or regulation for the guidance of your assistants in deciding upon the disposition of the carcass of an animal in which lesions of tuberculosis are found on post-mortem examination. 2. What is the value of an ante-mortem inspection of animals which are to be slaughtered? 3. Describe the interior construction of a slaughtering-room and name the essential features necessary from a sanitary standpoint. 4. Describe the method for the disposition of slaughter-house offal on the premises in a built-up section of the city in an inoffensive manner. 5. What are the indications that may be observed on live animals to show that it is the carrier of Texas fever infection? (a) How may

this disease be spread? (b) How would you deal with it in a stockyard? 6. Describe the appearance of a dressed carcass of immature or bob veal. 7. Describe the appearance of the lesions of nodular diseases. State how it may be distinguished from tuberculosis and tell what disposition would be made of viscera and carcass. 8. Describe in detail the method of examination of tuberculosis in a beef animal on post-mortem inspection. 9. Name the several varieties of meat poisoning. Give the causes of each. Describe the changes, if any, that may be observed in each condition with the naked eye in meat or meat food products. 10. What diseases of poultry unfit it for food? (a) What evidences would be perceptible to the naked eye upon which condemnation would be made? (b) What other methods of detection could be used? (c) How would you determine the age—and the probable length of time in storage?

CHIEF MILK INSPECTOR,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$1,900 per annum, October 7, 1912.

Experience—Weight 2.

(See page 441.)

Arithmetic—Weight 1.

1. From a dairy of 50 cows, each averaging 30 pounds of milk daily, how many pounds of butter can be made per day if the milk tests $4\frac{1}{2}$ per cent. and the "overrun" is $\frac{1}{8}$? 2. What is the "overrun" if 135 pounds of butter are made from 3,000 pounds of milk testing 4 per cent.? 3. If 1,200 pounds of milk contain 4 per cent. of fat and the fat contains 40 per cent. palmitin, 34 per cent. olein, 10 per cent. myristin, 6 per cent. butyric and 10 per cent. glycerides of other acids, determine the number of pounds

of each fat constituent. 4. Find the amount of solids not fat and the total amount of solids in milk which contains 3 per cent. of fat and which shows a lactometer reading of 27. Formulas:

$$\text{Solids not fat} = \frac{1}{4} L + .2 f$$

$$\text{Total solids} = \frac{1}{4} L + 1.2 f$$

L = lactometer reading.

f = per cent. of milk fat.

5. Given the formula:

$$\text{Per cent. of acid} = \frac{\text{No. cc of alkali} \times .009 \times 100}{\text{No. cc of sample of milk}}$$

Find the per cent. of acid in milk when 40 cc of alkali are used with 50 cc of the milk. 6. Given

$$\text{sp. gr. milk solids} = \frac{\text{milk solids}}{\frac{(100 \times \text{sp. gr.}) - 100}{\text{milk solids}} \text{ sp. gr.}}$$

Find the specific gravity of milk solids in a sample of milk which contains $12\frac{1}{2}$ per cent solids and which has a sp. gr. of 1.031.

Practical Questions—Weight 5.

1. What are the chemical constituents of milk and what variation in these is permissible in good milk? What are the causes of variation in these constituents? 2. Describe and draw a sketch of a lactometer and explain clearly its use. 3. Name four milk preservatives. State the purpose of and objection to each. Describe an analytic test for borax in milk. 4. Name four chemical adulterants used in milk. State the purpose of each. Give an analytic test to determine the presence of formalin. 5. Describe the Babcock method of testing milk, and state its purpose. 6. What chemical examination of milk would you make

in order to determine whether milk had been watered or skimmed? 7. (a) The milk from a certain dairy contains chlorine. Give the probable reason for its presence and a test for it. (b) The milk from another dairy contains carbolic acid. Account for its presence and give method for detecting it. 8. How can you explain the presence of bacteria in milk immediately after it is taken from the udder of a healthy cow? 9. What is rennet extract? How is it made? Of what use is it in testing milk? 10. What is oleomargarine? Give a simple test to show the difference between oleomargarine and pure butter.

Report Writing—Weight 2.

Write a report of about 300 words to the Chief of the Bureau of Health on the subject: How can the average quality of milk sold in Philadelphia be improved without increasing the cost to the consumer? Substance, penmanship, spelling, form, etc., will be considered in grading this report.

INSPECTOR OF DRAIN CONNECTIONS,
DEPARTMENT PUBLIC WORKS, BUREAU OF SURVEYS.
\$1,200 per annum, July 9, 1912.

Experience—Weight 2.

(See page 215.)

Practical Questions—Weight 7.

1. Describe in detail how drain pipe would be connected to a sewer under each of the following conditions: (a) Brick sewer without an outlet. (b) Terra cotta sewer with proper outlet. (c) Sewer with drain connection running to the curb. 2. What kind of mortar would you use in sealing sewer connections? State clearly and in detail how it should be made. 3. What flaws would you look for in an inspection of terra cotta pipe to be used in drain connection? 4. State in detail the proper manner of digging

and filling in a trench. What precautions should be taken in cases where trench is tunneled under a street railway track? 5. (a) How much pitch should be given to a 6-inch drain? (b) Make a sketch of a drain pipe connection to a terra cotta sewer, showing position of sewer, sewer connection, and the drain itself. 6. What is the invert of a sewer, the springing line, a lateral? 7. State in detail what you consider the important points to be kept in mind by an Inspector of Drain Connections. 8. If in digging a trench for drain connection soft earth or quick sand were encountered, what special precautions would you insist upon?

Report Writing—Weight 1.

Write a letter of at least 150 words to the Chief of the Survey Bureau, reporting upon an assumed case of defective work found in a house drain connection. Do not sign your name to this letter; use your examination number instead.

INSPECTOR, DEPARTMENT PUBLIC SAFETY,
BUREAU OF ELEVATOR INSPECTION.

\$1,000 to and \$1,200 per annum, July 5, 1912.

Experience—Weight 2.5.

(See page 215.)

City Ordinances—Weight 2.5.

1. What should be the relative diameters of sheave or drum to the diameter of cables used? 2. What is the smallest diameter lifting cable allowed by the City? 3. What is the minimum diameter of sheave required by the City? 4. What is the minimum size of sheaves or drums having $\frac{1}{2}$ -inch, $\frac{5}{8}$ -inch and $\frac{3}{4}$ -inch cables? 5. What kind of sheave enclosures are required for freight elevators in new buildings? In old buildings in which there is present a hatchway? 6. How is an air cushion required to be

tested by the City authorities? 7. Give in full the requirements for elevator locking devices? 8. State in detail the requirements for brakes on electric elevators.

Practical Questions—Weight 4.

1. Name the different types of elevators in use in this City. 2. Describe in detail the safety devices used on a hand-power operated elevator and tell how they are applied. 3. Describe in detail the different safety devices used on a standard belt elevator machine. 4. (a) What is an electric elevator? (b) How many types or methods of operating? (c) What is the best method? (d) Why? 5. Describe in detail the different safety devices used on electric elevator engines. 6. How should a drum be secured from the overhead center lift? 7. Should a car safety be placed on the bottom of a car or underneath? 8. What kind of a safety should be used on a passenger car operating 150 feet per minute or more? 9. What kind of a safety should be used on a freight elevator having automatic doors? 10. What should be the depth of an air cushion for an elevator having a rise of one hundred feet (100) above the top of the cushion? 11. Name three types of hydraulic elevators. 12. Why are the cables used on plunger elevators larger and heavier than those used on other types of hydraulic elevators? 13. What should be the proportion of air to water in a pressure tank? 14. What denotes that a hoisting cable is in a dangerous condition? 15. How often should pistons and piston rods be examined on hydraulic elevators?

Report Writing—Weight 1.

Write a formal report to the Chief of the Bureau of Elevator Inspection, giving in detail the scope and results of an inspection you have made, and all facts that you consider pertinent. Do not sign your name to this report; use your examination number instead.

INSPECTOR, DEPARTMENT PUBLIC SAFETY.

BUREAU OF ELEVATOR INSPECTION.

\$1,200 per annum, December 9, 1912.

Experience—Weight 2.

(See page 441.)

Laws and Ordinances—Weight 2.

1. What is the minimum strength for (a) pressure tank? (b) Any other part affected by the load for freight, for passenger, for drum shafts? 2. How must brakes operated by a check line be arranged? 3. State five requirements for elevator locking devices. 4. State the provisions on automatic door opening and closing devices. 5. Describe the kinds of safety clutches prescribed by law for passenger elevators and freight elevators. 6. Give the provisions on the construction of (a) hatchways, (b) elevator doors. 7. How often must power-driven elevators be inspected? Hand-hoist elevators? 8. Give the provisions on the attachment of counter weights.

Practical Questions—Weight 5.

1. What is the safest type of passenger elevator in use in Philadelphia? Describe in detail its construction and safety appliances. 2. Name the important parts of a hydraulic passenger elevator that should receive special attention by the inspectors. How should they be inspected? 3. How should the operator handle a load car when coming down, the elevator being of a hydraulic type? 4. Describe in detail the method of inspecting cables. 5. What safety appliances are required on passenger elevators that are not required on a freight elevator? 6. Are pilot valves on high-speed elevators necessary? Explain their operation. 7. Describe the kinds of safety clutches prescribed by law for passenger and freight elevators, and explain how they are attached to the cars. 8. What is the object in using

a by-pass valve? 9. Give the principal features of a belt-driven elevator. 10. Explain the functions of the controlling valves on a hydraulic elevator. 11. Describe and explain the difference between a full automatic gate and a semi-automatic gate; also give the height that the top of the gate should be above the floor. 12. State in detail how you would make a thorough inspection of an elevator shaft.

Report Writing—Weight 1.

One week after you inspected an elevator in a department store an accident occurred and the car dropped from the fifth to the first floor. You then made a second inspection after the accident. Write a full report in the form of a letter to the Chief of the Bureau of Elevator Inspection, giving a detailed account of the accident and its cause, and show that it was in no way due to the defects which you should have detected in your first inspection. Sign the letter "John Doe." In grading this letter the following points will be considered: Form, spelling, writing, grammar, style and ideas presented.

ASSISTANT INSPECTOR OF HOUSE DRAINAGE.
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$1,300 per annum, July 9, 1912.

Experience—Weight 1.5.

(See page 215.)

Designing Drainage—Weight 1.5.

Make a sketch of a system of house drainage to take care of the following: BASEMENT—One (1) water closet, cesspool for floor drain and a two-part laundry tub. FIRST FLOOR—Two (2) sinks, one (1) urinal, and one (1) refrigerator. SECOND FLOOR—Two (2) water closets, three

(3) wash basins, and one (1) bathtub. **THIRD FLOOR—** One (1) water closet, one (1) wash basin, and one (1) bathtub. Rain water conductors front and back for gabled roof. State the kind and size of pipe and the character of the traps to be used.

Knowledge of Regulations—Weight 1.5.

1. State the regulations concerning the main house drain (material, size, installation). 2. State in detail the manner in which the waste pipes from refrigerators, water filters, and gas engines shall be connected to the drainage system. 3. State the regulations in regard to soil and waste pipes. 4. What are the regulation specifications for 8-inch cast iron pipe and 3-inch wrought iron pipe? 5. Where may each of the following kinds of pipe be used in a house drainage system: Cast iron, wrought iron, brass, lead, terra cotta? 6. Mention four kinds of joints used in house drainage work. Describe in detail the regulations governing the manner of making them. 7. State the regulations in regard to water closets under the following heads: (a) Location, (b) flushing, (c) tanks, (d) types prohibited.

Practical Questions—Weight 4.

1. What would be the grade per foot of a drain 169 feet long, entering a 3-foot sewer whose invert is 12 feet below grade and terminating 43 inches above grade? 2. Which of the following closets in an old house would you condemn? Why? (a) Flush closet, with tank 8 inches by 10 inches by 24 inches; (b) flush closet, with tank 7 inches by 9 inches by 25 inches; (c) flush closet, with tank 12 inches by 12 inches by 12 inches; (d) flush closet, with tank 10 inches by 10 inches by 20 inches; (e) siphon closet, with tank 5 inches by 9 inches by 24 inches; (f) siphon closet, with tank 6 inches by 10 inches by 22 inches. 3. What is the smallest size of pipe required to drain a

house and lot, 50 feet by 120 feet, the drain to have $\frac{3}{4}$ -inch fall per foot? 4. Define (a) atmospheric pressure, (b) waste pipe, (c) trap, (d) back pressure, (e) siphonage. 5. What are the various tests of a house drainage system? Explain in detail any two of them. 6. If a storage tank were at an elevation of 95 feet above the ground, how much pressure per square inch would be required to raise water to it through a $\frac{1}{2}$ -inch pipe? What difference would there be if a 2-inch pipe were used? 7. In what way may sewage from a basement water closet be discharged into the sewer if the basement is 9 feet below the street sewer?

Report Writing—Weight 1.5.

Write a report in letter form to the Chief of the Bureau of Water of your investigation of a defective and inadequate drainage system of a four-story, 15-room house, occupied by 18 people. Give your recommendations in detail. Do not sign your name to this letter; use your examination number instead.

ASSISTANT FIRE MARSHAL,
DEPARTMENT PUBLIC SAFETY, BUREAU OF POLICE.
\$2,000 per annum, October '17, 1912.

Experience—Weight 2.

(See page 441.)

Knowledge of Regulations—Weight 2.

1. From what original source or sources do the Fire Marshal and his assistants derive their authority? 2. Mention five of the most common causes of fires in the City of Philadelphia. 3. What is the purpose of the creation or establishment of the office of Fire Marshal? 4. Name five classes of places, buildings, or structures, over which the Fire Marshal's office exercises jurisdiction. 5. Enumerate in detail the conditions required for persons

before and while operating a moving-picture machine. 6. Enumerate in detail the equipment and protecting devices required for moving-picture machines before they can be operated. 7. What are the requirements relating to fire escapes, and the penalties for offenders in this respect? 8. What should be done by an applicant who desires a license for manufacturing, having, keeping, selling, using, transporting and carrying of high-grade explosives, where application therefor has been refused by the Fire Marshal? 9. In case an Assistant Fire Marshal, upon investigation, finds any violations of the requirements on the part of the proprietor of a building of a public character, what is his immediate duty, and if ignored, to what penalties does such proprietor subject himself? 10. Are churches required to procure a license for single exhibition of moving pictures? 11. Mention all the provisions which relate to licenses and places where high explosives are manufactured, kept, sold, stored or used. 12. What is the maximum capacity of an acetylene generating and gas-holding apparatus permitted to operate without a license? 13. What are the requirements relating to a plant of this kind having a capacity of more than this amount, before a license can be issued? 14. Is the manufacture of fireworks permissible in the City of Philadelphia? 15. What is the greatest amount of ordinary phosphorus or guncotton that can be kept under license, in any one building?

Practical Questions—Weight 5.

1. If you were attending a fire, what facts would you endeavor to ascertain? 2. What sources of information would you utilize in gathering this information? 3. In case you had certain suspicions regarding the cause of a fire, tell in detail what considerations would cause such suspicions. 4. If such suspicions could not be allayed by your personal investigation on the fire ground, what sub-

sequent investigations would you make, and what authority could you exercise in making them? 5. In case your investigations and the evidence gathered convinced you that crime had been committed, what would you do? 6. Of what crimes might such evidence prove a person guilty? 7. What particulars would you look and inquire into when making an examination to the possibility of fires? 8. Mention several fire extinguishing appliances and tell how you would know whether each was serviceable. 9. What conditions should be insisted on in department stores, hotels, and theaters, so that employees and others would be safeguarded in case of fire? 10. Application has been received for a license to manufacture and store petroleum, benzine, benzole and naphtha. What investigations would you make before submitting a report to the Mayor on which he could base his action with reference to issuing a license? What facts does such a license contain?

Report Writing—Weight 1.

Assume that, as Assistant Fire Marshal, you have been ordered to inspect a moving-picture place. Write a report to the Fire Marshal covering your inspection, assuming such facts as you wish. Sign the report "John Doe." Mechanical arrangement, adherence to the subject, and expression will be considered in marking this subject.

INSPECTOR, OFFICE OF FIRE MARSHAL,
DEPARTMENT PUBLIC SAFETY, BUREAU OF POLICE.

\$1,200 per annum, October 17, 1912.

Experience—Weight 2.

(See page 441.)

Arithmetic—Weight .5.

1. An auditorium, seating 500 persons, is 50 feet long 40 feet wide and 20 feet high. How many square feet of

floor space and how many cubic feet of air space does that allow for each person? 2. The number of inspections in 1910 was 4,085. In 1911 the number was 4,902. What was the increase per cent.? 3. The law permits the storage of not more than five barrels of any products of which gasoline forms 25 per cent as a component part. You find in one building 175 gallons of such substance or products. Is this legal? If so, how much more could be stored there? If not, how much was it over the legal amount? 4. In your inspector's district the following materials and amounts were stored: Saltpetre, 1,265 pounds; nitrate of soda, 1,787 pounds; nitrate of lead, 2,765 pounds; nitrate of baryta, 396 pounds; nitrate of strontia, 6,852 pounds; nitrate of ammonia, 9,765 pounds; permanganate of potash, 8,760 pounds; chlorate of potash, 2,978 pounds; chlorate of soda, 6,852 pounds. What was the total amount in tons, and if the average value of a ton was \$85.75, what was the total value?

Laws and Regulations—Weight 2.

1. From what original source or sources do the Fire Marshal and his assistants derive their authority? 2. Mention five of the most common causes of fire in the City of Philadelphia. 3. What is the purpose of the creation or establishment of the office of Fire Marshal? 4. Name five classes of places, buildings, or structures over which the Fire Marshal's office exercises jurisdiction? 5. What do you understand by the term "fire escape"? 6. Mention the classes of buildings which must be provided with them. 7. How frequently must the Fire Marshal or his inspectors examine buildings having fire escapes? 8. With regard to platforms tell: (a) Of what materials they must be made. (b) How wide they must be. (c) Who determines their length? (d) On what their length depends. (e) Across how many windows they must extend.

(f) Width and thickness of slats of floor. (g) How far apart slats may be placed. (h) How these slats are fastened. (i) The minimum weight they must sustain per square foot of surface. (j) What the ratio or factor of safety is for platform loads. 9. With regard to stairways tell: (a) The minimum safe load per step. (b) The minimum safe load of the tread. (c) The width of tread. (d) The maximum rise of tread. (e) The width of the stairs. (f) How steps are fastened to strings or horses. 10. Give in full the requirements concerning the drop ladder on bottom balcony.

Personal Fitness—Weight 2.

1. What attitude would you assume and maintain toward owners, managers and superintendents of places while making inspection? 2. If any of them were surly, sour or sarcastic in their treatment of you, under what conditions would you be justified in giving them the same treatment? 3. If the superintendent told you everything was in perfect order and went on to tell you a long story of what he was doing and having done so that everything might always be in the best shape, and you believed he was truthful because you knew him well, what would you do? 4. Would you, while making an inspection, make memoranda of defects and matters to be corrected, or leave that until you got back to the office? 5. Is your health good? Have you been sick for any length of time? If so, what was the disease? How long were you sick? 6. Personal appearance.

Practical Questions—Weight 2.5.

1. What is the duty of the Fire Marshal and his inspectors with regard to fire escapes after they have been erected? 2. What inquiries and investigations is the Fire Marshal, through his inspectors, empowered to make concerning fire drills? 3. Tell how a fire drill should be con-

ducted. 4. What penalties are provided for neglect, refusal or non-compliance with the requirements relating to fire escapes? 5. Explain how you would find out whether fire escapes were properly anchored or attached to the wall. 6. How should fire escapes be cared for so as to prevent deterioration from rust? 7. How would you know that fire escapes were so built as to support the strain required by law? 8. You are inspecting a building with fire escapes and find: (a) Boxes in the passageways leading to exits. (b) The exits unmarked and not easily found or located. (c) The doors of exits locked. (d) Landings and platforms blocked with refuse of various sorts. What would you do? 9. Describe some apparatus or means provided for putting out fires by the employees in department stores and other large buildings. 10. In what condition should these appliances be kept, and how would you know that everything was in serviceable condition?

Report Writing—Weight 1.

Assuming that, as inspector, you have been ordered to inspect a building with reference to its fire escapes, write a report to the Fire Marshal covering your inspection. Sign the report "John Doe." Mechanical arrangement, adherence to the subject, and expression will be considered in marking this subject.

HIGHWAY INSPECTOR,
DEPARTMENT PUBLIC WORKS,
BUREAU OF HIGHWAYS AND STREET CLEANING.
\$1,300 per annum, June 8, 1912.

Experience—Weight 1.

(See page 215.)

Practical Questions—Weight 9.

1. Define the duties of a Highway Inspector, and enumerate the classes of public work that come under his

supervision. 2. (a) Sketch with dimensions, surface to subgrade, the proper cross section of the roadway of a street paved with asphaltum, with granite blocks, with vitrified bricks, with wood blocks, all on concrete foundation. Show two car tracks on the street and arrange for the paving between the tracks according to your judgment. (b) Under what conditions is each of the above pavements desirable? 3. (a) A 60-foot street having 12-foot sidewalks, connects at right angles with two parallel streets similar to it. The block distance on connecting street is 300 feet; all have granolithic sidewalks and granite block roadways. For the connecting street, how many square yards of granolithic paving will be required to pave it between the near curbs of the parallel streets, and how many granite blocks will be required to pave its roadway, assuming 24 blocks will lay one square yard? (b) Make a sketch illustrating the above with a cross section, showing the depth of gutters, crown of street, size of granite curbs and slope of sidewalk. 4. A street 60 feet wide is to be graded for a distance of 400 yards. The cut at one end is 10 feet and the fill at the other is 4 feet, side slopes for both cut and fill are 1 vertical on $1\frac{1}{2}$ horizontal. Make an estimate for excavating and placing earth. 5. (a) Write the essential clauses of a specification covering materials and methods of construction for a Telford road. (b) For a Telford road to be treated with any one of the tar or bituminous compounds. (c) What is the essential difference between a macadam and a Telford road? (d) What are the principal requisites of the material for a broken stone road? (e) What are the principal causes of failure of stone roads? (f) What is the most important matter to be considered in the construction of an earth or stone road, and by what means is it generally provided for?

INSPECTOR,
DEPARTMENT PUBLIC WORKS, BUREAU OF LIGHTING.
\$1,000 per annum, July 12, 1912.

Experience—Weight 2.

(See page 215.)

Arithmetic—Weight 1.

1. Multiply 48,026 by 804. 2. Divide 36,034,990 by 365. 3. Beginning a certain year there were 1,362 gas lamps in a certain ward. During the year 37 lamps were discontinued and 225 new ones added. How many lights were there at the close of the year? 4. Suppose that in your district there were 2,832 lights, of which 1,442 were gasoline lamps and the remainder gas lamps. Of which kind of lamp is there the greater number and how many? 5. Assuming that a mantle on a gasoline lamp costs .2 of a cent per day; gasoline $4\frac{1}{5}$ cents per day; care, filling and lighting $4\frac{1}{2}$ cents per day, and repairs .25 of a cent per day, what is the cost of maintaining one lamp during a month of 30 days?

Practical Questions—Weight 5.

1. Give the exact location and boundaries of the following: Independence Square; Morris Square; Mifflin Square; Womrath Park; Black Oak Park. 2. What numbers north or south are the following streets: Cumberland street; Jefferson street; Wharton street; Wolf street; Buttonwood street? 3. What are the names of the following officials: Director of Public Safety; President of Civil Service Commission; Director of Supplies; City Solicitor; City Treasurer. 4. Select any portion of the City comprising eight city blocks. Give boundaries of the same. State in detail your method of locating ten new gas lamps to be placed in this district. 5. You, as inspector, have recommended the discontinuance of three lamps in your district. Give a different reason in

each case for your recommendation. 6. What are the relative merits of gas and gasoline lamps? Do you know of any local conditions which would restrict the use of one or the other? 7. Name three kinds of sidewalk you would be likely to encounter in locating a street lamp. Which would be most easily repaired after placing lamp? 8. Assume that you are sent out to inspect lamp locations at the following points: (a) Oxford street, between Fifteenth and Sixteenth. (b) Orthodox street, near Main street, Frankford. (c) Cheltenham avenue, west of Germantown avenue, Germantown. (d) Seventeenth street, north of Girard avenue. Using trolleys for distances of more than ten squares, how would you go from City Hall, make the inspections and return to City Hall, all in one trip?

Report Writing—Weight 2.

Assume that the number, kind and distribution of lamps in your district are unsatisfactory. Write a report in the form of a letter to the Civil Service Commission of Philadelphia in which you state the defects assumed and make recommendations that will remedy the unsatisfactory conditions. *Note:* This report should be not less than 200 words in length. Penmanship, spelling, punctuation, form and neatness will be taken into consideration in marking this report, as well as expression and adherence to the subject.

INSPECTOR OF STREET CLEANING,
DEPARTMENT PUBLIC WORKS,
BUREAU OF HIGHWAYS AND STREET CLEANING.
\$1,300 per annum, February 24, 1912.

Arithmetic—Weight 2.

1. What is the difference between a square yard and a cubic yard? In what way is each unit applied to street

cleaning? 2. How many square yards in a mile of street thirty feet wide? 3. How many cubic yards in a truck eight feet long, four feet wide and two feet high, inside box measurements? 4. If an ash can holds two and one half cubic feet, how many canfuls will such a truck hold? 5. If a flushing machine cleans 30,000 square yards of pavement per day with the use of 400 gallons of water per 100 square yards, and the water costs \$8 per million gallons, what is the daily cost of water per machine? 6. If a horse in the department is fed 23 pounds of oats and 15 pounds of hay per day, 7 pounds of bran and 14 pounds of chopped feed per week, and 100 pounds of straw are allowed for each horse every month, what will be the cost of keeping a horse on this basis for the month of January, if oats are worth 60 cents a bushel (32 pounds), hay \$25 a ton, bran \$1.50 a hundred, chopped feed 75 cents a hundred, and straw \$19.50 a ton? 7. Out of 728 cubic yards of rubbish collected daily in a certain district, 263 cubic yards are worthless refuse. To dump this refuse at sea will cost, at the lowest bid, 20.42 cents a cubic yard. If this refuse is disposed of at an incinerator plant, the daily fixed charges are: Labor, \$8.33; foreman, \$2.75; watchman, \$2.12; supplies and repairs, \$2.50; interest, \$2.24, and the ashes resulting from incineration 3.1 per cent, must be dumped at sea at a cost of 20 cents a cubic yard. If this plant has a daily capacity of the amount named above, what would be the amount saved by the incineration plan in a year of 310 working days?

Practical Questions—Weight 6.

1. What are the principal kinds of pavement used on the streets of Philadelphia? 2. What are the causes of street dirt? 3. Give a brief outline of the various methods which are employed for the removal of street dirt? 4.

What is the equipment of a blockman in Philadelphia—present system? Name some of the variations from this system. 5. Why is a machine broom preceded by a sprinkling cart? 6. What is the essential principle of a flushing machine? 7. Describe a squeegee machine as used in street cleaning. 8. Why is water necessary in efficient street cleaning? 9. Should blockmen work during a rain, and if so, why? 10. In what way are street sweepings, blown by the wind, a menace to health? 11. Give definitions of: (1) ashes, (2) garbage, (3) rubbish. 12. What sort of receptacles should be used for setting out ashes and garbage, and why? 13. What are the requirements for vehicles for transporting ashes or garbage? 14. How are householders advised of the time of collection of the wastes? 15. What final disposition is made of garbage and what by-products are reclaimed? 16. How often should sewer inlets be cleaned? What affects the rate of filling up, and how may this be reduced? 17. When snow has fallen, what necessary work must the blockmen immediately perform? 18. Why is it necessary for a special man to be put in charge of the hydrant wrench to be used in turning on water for street cleaning work? 19. What are waste paper cans, and why used? 20. What items must be known in order to compute the unit cost of street cleaning? 21. What items must be known in order to compute the unit cost of ash or garbage removal? 22. Trace from first to last the making of a City ordinance. 23. What city official is empowered to draw specifications covering street cleaning work in this city? 24. From what source is such authority derived? 25. What is meant by the vacuum method of street cleaning?

Report Writing—Weight 2.

Write a letter to the Civil Service Commission, Philadelphia, setting forth your views as to how street-cleaning

methods could be improved in Philadelphia, and outline a more effective plan for properly cleaning so large a street area as the City of Philadelphia possesses. Give your reasons for any suggestions you may make. Do not sign your name to this letter; use your examination number instead.

INSPECTOR, DEPARTMENT SUPPLIES.

\$1,200 per annum, June 1, 1912.

Arithmetic—Weight 2.5.

1. Add: 864,329, 753,926, 587,267, 5,231, 876,422, 978,439, 827,661, 784,578. 2. Add: $62\frac{7}{8}$, $32\frac{4}{5}$, $19\frac{1}{4}$, $8\frac{1}{16}$, $12\frac{1}{2}$. 3. Divide 8,643.217 by 8.754.
4. Correct the following bill:

464 yards muslin at $37\frac{1}{2}$ cents....	\$174 50
63 yards cambric at $12\frac{1}{2}$ cents....	7 83
178 neckties at 18 cents	32 00
129 pairs hose at 22 cents	28 30
133 pairs gloves at 32 cents	42 40
176 yards shirting at 28 cents	49 10

What is the discount at 3 per cent?

5. Assuming that there are 40 cubic feet in a ton of coal, what is the capacity of a bin 12 feet 6 inches long, 8 feet 4 inches wide, 10 feet 5 inches high? 6. At 8 cents a pint, what would be the cost of 62 gallons of vinegar?

Letter Writing—Weight 1.5.

The firm of John Doe has objected to an "inspection" you have made. Write a letter of about 150 words to the Director of Supplies, explaining your inspection, giving him the reasons in full for your refusal to accept the goods. You may select any material you desire. This paper will be marked for mechanical arrangement, adherence to the subject, and expression, rather than for the correctness of the opinions given.

Practical Questions—Weight 6.

1. What precautions would you take to insure that a fore-quarter of beef was fit for human food? What would be your procedure upon finding it defective? 2. What examination would you make of the following vegetables and what conditions would cause you to condemn the same for food: Onions, cabbage, potatoes, turnips? 3. Give the details of your procedure upon being sent to inspect a lot of stationery that has been delivered. 4. Describe in detail your method of insuring the full delivery of coal of the quality specified in a contract. 5. A delivery of 100 bags of coffee, 50 tubs butter, 100 bags flour, 40 pounds prunes, 50 cans corn, 40 boxes oat meal, is to be inspected by you. What fraud would you be on your guard against in inspecting each item? Would your method of inspection vary according to the season of the year? 6. What records would you see fit to keep of inspections made? 7. What defects would you look for in shoes? 8. What would be your action upon discovering that a lot of perishable goods is below the quality specified in the contract for same?

INSPECTOR,

DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.

\$1,000 per annum, February 27, 1912.

INSPECTOR (NUISANCE),

DEPARTMENT PUBLIC HEALTH AND CHARITIES,

BUREAU OF HEALTH.

\$1,100 per annum, February 27, 1912.

Arithmetic—Weight .5.

1. The cost of the maintenance of an institution was \$326.46 for Monday, \$487.34 for Tuesday, \$123.48 for Wednesday, \$287.62 for Thursday, \$455.23 for Friday,

\$463.45 for Saturday, and \$368.75 for Sunday. What was the total cost for the week? 2. The number of pensioners in Pennsylvania, June 30, 1899, was 104,681, and in New York 87,527. How many more pensioners had Pennsylvania than New York? 3. If the average daily cost for repairing the streets is \$5,286.25, what is the cost for 365 days? 4. If \$245.76 are spent for 512 spigots, what is the average cost of one?

City Information—Weight 1.

1. Give the shortest route by trolley from City Hall to Forty-first street and Girard avenue. 2. In what directions do the trolley cars run on (a) Twelfth street? (b) Spruce street? (c) Sixteenth street? (d) Vine street? 3. Name and locate five large manufacturing establishments. 4. In what section of the city is the population of the city densest? 5. Locate the following hospitals: (a) Jefferson, (b) University, (c) Medico-Chirurgical, (d) St. Agnes. 6. What street is No. 1900 north? 600 north? 2100 south? 700 south? 7. Name five departments of the City government.

Penmanship—Weight .5.

This subject will be marked on the writing in the report.

Personal Fitness—Weight 2.5.

1. Judgment: (a) Suppose you were given a certain city block to inspect with reference to water waste, or to locate a nuisance, how would you state your business to the lady of the house when she came to the door? (b) If the lady of the house refused to admit you, what would be your next step? 2. Manner of approach. 3. Appearance: Bearing. Clothing, hands and face.

Practical Questions—Weight 4.

1. What is sanitation? 2. Why are sanitary inspections necessary? 3. What three sanitary provisions are essential to maintain a healthy dwelling? 4. What is sewage? 5. When does sewage constitute a nuisance? 6. What branch of the City government, other than Councils, has the power to declare a condition to be a nuisance, and state upon what grounds such a declaration would be justified, if tested in court? 7. Why does the City concern itself with the discovery and abatement of nuisances? 8. Name five of the most prevalent nuisances ordered abated by the Bureau of Health. 9. Name three conditions declared by ordinance to be nuisances. 10. What is a pondrette pit and from what sections of the city is it excluded? 11. Would a broken and uneven yard pavement constitute a nuisance within the jurisdiction of the Health Bureau? Give a reason for your answer? 12. An inspector is given a complaint stating there is water in a specified cellar. Would this cellar water constitute a health nuisance, and how extensive would be your investigation when verifying the complaint? 13. When would a yard be said to be in a nuisance condition? 14. What is a soil pipe and when would you feel justified in reporting it as a nuisance? 15. When is a privy vault a nuisance? 16. Who has the power to abate a nuisance when the owner, upon order, neglects to do so, and how is the cost collected?

Report Writing—Weight 1.

Write a report to the Civil Service Commission, Philadelphia, of an inspection that you have made. Give the location of the property inspected, the defects you found, and suggestions as to the means of correcting them. Assume the facts necessary to enable you to write a report of not less than one hundred and fifty words. Do not

sign your name to this report; use your examination number instead.

Spelling—Weight .5.

1, information; 2, neglect; 3, tenement; 4, quarterly; 5, immediately; 6, physician; 7, management; 8, assistant; 9, institution; 10, convenience; 11, ordinance; 12, opinion; 13, security; 14, insurance; 15, balance; 16, provision; 17, separate; 18, license; 19, original; 20, misdemeanor.

INSPECTOR (CONSTRUCTION WORK),
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.
\$3.00 per day, December 9, 1912.

Experience—Weight 2.

(See page 441.)

Arithmetic—Weight 3.

1. What is the water pressure per square inch on pipe 150 feet below the source of supply, the weight of water being 62.5 pounds per cubic foot? 2. How many cubic yards of earth must be removed to form a trench $1\frac{1}{4}$ miles long, 5 feet deep, and $2\frac{1}{2}$ feet wide? How long will it take 20 men to dig the trench, provided each man can remove on an average of 8 cubic yards per day? 3. If the average weight of a length of pipe is 380 pounds, what would be the weight of 500 feet of pipe, using standard Bell and Spigot pipe? 4. A pipe line 1,000 feet long has an elevation at one end of 38.6, and at the other end 46.50. What is the per cent. of grade?

Practical Questions—Weight 5.

1. If about to excavate for a pipe trench, what measures would you take to interfere with traffic as little as possible, and also to protect the public? 2. What would be

the inspector's duties to ascertain that pipe trench is excavated to the proper location and depth? 3. If the pipe trench passed under a sewer and the sewer should break, what would you do? 4. Describe the manner of laying the pipe in the trench. 5. Describe the method of making a joint with bell and spigot joint. 6. If a pipe line is to run at right angles with an existing pipe line of the same diameter, describe the manner of making the connection. 7. How would you connect a line with an existing line without shutting off the water? 8. What is a split sleeve? When is it used? Describe the manner of its use. 9. Describe the important parts of a 6-inch valve. 10. How would you set a fire hydrant and connect it with the pipe line? 11. Describe in detail the method of testing a pipe line, and state the inspector's duty during the test. 12. State what, in your opinion, is the best manner of refilling a pipe trench after the test is completed.

INSPECTOR (DOCK DREDGING),
DEPARTMENT WHARVES, DOCKS AND FERRIES.

\$1,000 per annum, December 9, 1912.

Experience—Weight 2.

(See page 441.)

Arithmetic—Weight 2.

1. A space 60 feet long, 15 feet wide, with an average depth of 6 feet at one end, 8 feet at the other, is to be excavated. How many cubic yards of earth are to be excavated? 2. How many cubic yards of concrete in the bulkhead of a dock 240 feet wide, the walls 6 feet thick at the bottom, 4 feet at the top, and 30 feet high. 3. A certain contract for pier work amounted to \$230,800. The cost of masonry was 32 per cent., the piling

23 per cent., and the wood work 9 per cent. of this amount. The balance was for steel work at an average cost of $3\frac{1}{4}$ cents per pound. How many tons of steel work were in the contract? 4. A rectangular dock is 80 feet wide and 180 feet from bulkhead line to pierhead line. Soundings are taken as follows:

Distance from Bulkhead	North side of dock	Center of dock	South side of dock
0	19.4	17.2	18.0
30	20.2	18.2	17.0
60	17.4	18.0	19.0
90	20.2	21.3	19.2
120	24.2	23.0	22.0
150	24.4	24.8	23.0
180	26.0	26.0	26.

Compute the volume of material to be dredged from the dock to give a 26-foot depth at mean low water.

Practical Questions—Weight 6.

1. Describe a tide gauge and describe the method of making records of soundings in a tidal river. 2. Explain clearly the best method of setting ranges. 3. How is the position of a dredge determined on actual work? 4. Explain the operation of dredging in a river channel. 5. A dock 500 feet long and 200 feet wide has been dredged to a depth of 30 feet. Illustrate by diagram and describe your method of sounding the dock to determine whether it had been properly dredged. 6. Name three kinds of dredges. Under what condition should each be used? Describe one of them in detail. 7. Upon what conditions does the progress of dredging depend?

ASSISTANT MASONRY AND CONCRETE INSPECTOR,
DEPARTMENT WHARVES, DOCKS AND FERRIES.

\$900 per annum, February 28, 1912.

Experience—Weight 1.

(See page 215.)

Practical Questions—Weight 9.

1. Describe the manner of mixing concrete by hand.
2. If a reinforced concrete wall is to be built, describe the manner of placing the concrete.
3. If a concrete wall requires more than one day to construct, what should be done to provide for proper bonding of concrete between two days' work?
4. Give a physical test for clean sand.
5. What care should be taken to store cement, to prevent injury to it?
6. What is meant by grading of stone for use in concrete?
7. What care should be taken in mixing concrete when the temperature of the air is below the freezing point?
8. The average dimensions of a pile of sand are 20 feet long, 12 feet wide and 5 feet high. How many cubic yards does it contain?
9. What is meant by a batch of concrete?
10. Having 640 bags of cement on hand and using 20 barrels per day, how many days will it last?
11. If you were building a reinforced concrete wall, write a report on one day's work. State work performed and materials on hand.
12. If about to build a wall of concrete having dimensions 1 foot 6 inches wide at the top, 5 feet wide at bottom, 10 feet in height, 100 feet in length, the concrete mixture being 1 part of cement, 2 parts of sand, and 6 parts of broken stone, get out an order for a sufficient quantity of each of the materials to be used.

SPECIAL INSPECTOR OF RAILWAY STREETS,
DEPARTMENT PUBLIC WORKS, BUREAU OF HIGHWAYS.
\$1,500 per annum, December 10, 1912.

Experience—Weight 2.

(See page 441.)

Practical Questions—Weight 8.

1. (a) Give a sketch showing the type of rails used in railway streets; also of the rails in position and the support under the rails. (b) Describe the manner of fastening the rails. 2. Give the size of rails and ties ordinarily used in street railways. 3. (a) In paving a new street on which railway tracks have been laid, how would you prepare the bed? (b) How would you determine whether the bed was in proper condition for laying the pavements? 4. Describe in detail the mixing of concrete and the laying of concrete base in paving of streets. 5. Name the kinds of pavements used in city streets. 6. Give a general description of the parts forming an asphalt pavement, with the depth of each. Illustrate by sketch. 7. How would you test vitrified brick to determine whether they were satisfactory or not? 8. In laying a granite block pavement, describe how the blocks should be placed: (a) between the curb and rails; (b) between the rails; (c) at street intersections. 9. A city block occupied by a street railway and paved with asphalt needs repairing in several places. How would you indicate what places needed repairs, and describe the manner in which the work should be done? 10. A street paved with wood blocks is in need of repairs for an entire block. Describe the manner of doing the work. 11. How many square yards of asphalt pavement would be required to pave a section of a street 364 feet long and 9 feet 6 inches wide? 12. How many cubic yards of sand would be required under vitrified brick in paving

a section of street 480 feet long and 26 feet wide? 13. Two streets, each 50 feet wide, intersect at right angles; the sidewalks are each 12 feet wide, the curbs are each of 12 feet radius. How many square yards of pavement in intersection? 14. If the distance between the curb and the rail is 10 feet, and the portion to be repaired along the curb is 12 feet, and along the track 8 feet; how many square yards of pavement would be required?

INSPECTOR SEWER REPAIRS,
DEPARTMENT PUBLIC WORKS, BUREAU OF HIGHWAYS.
\$1,300 per annum, October 4, 1912.

Experience—Weight 2.
(See page 441.)

Mensuration—Weight 2.

1. It is required to construct a cesspool 32 feet deep, 9 feet inside diameter and 11 feet outside diameter. The wall of the cesspool is to be constructed of concrete. How many cubic yards of earth will be removed? How many cubic feet of concrete will it take for the wall, and how many gallons of sewage will the cesspool hold when completed? 2. A cesspool 37 feet deep, 10 feet inside diameter, has running into it two pipes, each 6 inches in diameter. If the sewage flows at the rate of $3\frac{1}{2}$ feet per second with the pipes one-half full, how long will it take them to fill the cesspool to two feet below the top? 3. The total number of gallons of sludge removed daily from a certain city is 32,000,000. 3.75 per cent. of the sludge is organic matter, 4.25 per cent. is inorganic matter, and 92 per cent. is water. How many gallons of each in the sludge? 4. For a trench one mile and a quarter long, 6 feet wide at the top and 4 feet at the bottom, and 12 feet deep, how many cubic yards of earth must be re-

moved and how long will it take 44 men to dig the trench if each man can remove $5\frac{1}{2}$ cubic yards daily?

Practical Questions—Weight 5.

1. What precautions should an inspector observe, morning and noon, before permitting workmen to proceed with the work? 2. What tests should be applied to bricks for sewer work? How must bricks be laid in sewer construction? 3. What defects in terra cotta pipes would cause you to reject them? 4. Describe the methods by which the inside of sewer joints is made perfectly smooth? 5. Name five imperfections common in pipe sewers and state how these imperfections may be avoided or remedied? 6. What is the purpose of lampholes? 7. What repairs can be made to a brick sewer while it is being used? State in detail the methods. 8. What inspection would you make of a sewer which had just been repaired, in order to determine that the work was up to the standard or specifications? 9. In case the main street sewer was clogged up so that it would not carry off the house drainage, state in detail how you would locate, determine the nature of, and remedy the trouble. 10. If a brick sewer had caved in because of continued high water in a creek adjacent to the sewer, how would you repair the sewer?

Report Writing—Weight 1.

Write a report, about 200 words, to the Chief of the Bureau of Highways, showing that the need of further repairs to a certain sewer in a residence district is not due to your carelessness in supervising the first repairs two weeks ago.

SPECIAL INSPECTOR, DIRECTOR'S OFFICE,
DEPARTMENT PUBLIC WORKS.

\$2,500 per annum, March 8, 1912.

Experience—Weight 3.5.

(See page 215.)

*Development of Improved Methods of Office Work, Their
Application, and Methods of Promoting Efficiency
of Employees in the Performance of Their
Duties—Weight 3.*

1. What method would you adopt in laying out or arranging the work for an office force consisting of several employees, so as to insure their working efficiently and being kept continuously employed? 2. How would you ascertain a proper day's work for a clerk whose work was of a routine nature, such as entering the time of a force of workmen on pay-rolls and cost sheets? 3. What method would you adopt for insuring the work allotted to each employee being correctly done and completed each day? 4. What devices are you familiar with for producing duplicate copies of typewritten matter, and under what circumstances is it advantageous to use each? 5. On what kind of work is it preferable to use a non-listing adding machine such as the comptometer, and on what class of work a listing adding machine such as the Burroughs, and why? 6. After the determination of the best methods for the performance of the various undertakings for which an office force is maintained, what steps would you take to insure their permanency—especially in the case of things that would have to be done at intervals of several months? In other words, what would you do to prevent such things being overlooked when the time came for their being attended to, and how would you make sure that the established method would be followed? 7. What method would you follow for

keeping track of the progress of work on the various undertakings or jobs being carried on by or for the Department of Public Works: (a) in the case of work done by the Department's men? (b) In the case of work done by outside contractors? 8. How many misunderstandings between employees and those in charge of work be avoided?

Knowledge of Accounting—Weight 3.5.

1. What sort of statements or reports should the manager of a business receive each month in order that he may keep well informed as to the current expenses and other financial matters pertaining to the business? 2. For a business comprising several departments, each incurring expense for labor (wages and salaries) and materials, how would you classify, or under what headings would you group the various expenses? 3. What expenses might such a business as that considered in question 2 incur other than wages and salaries or materials? 4. Make up a typical periodical statement or analysis of expenses for a business consisting of the following departments: General business administration (including administration, buying, selling and accounting), power plant, storeroom, manufacturing department "A," manufacturing department "B." 5. State the sources from which the information for compiling the statement referred to in question 4 may be secured and describe the method followed in securing same. 6. What method would you adopt for compiling the cost of the various jobs or orders under way in a manufacturing establishment where each employee works on several different jobs or orders in the course of each day? 7. Draw up a typical general ledger balance sheet for a concern conducting a manufacturing or merchandising business. 8. Journalize, in your firm's double entry bookkeeping, the following:

A, in payment of a debt of \$15,000 due to your firm for machines, tools and articles pertaining thereto, transfers his building and its ground, which you accept at a value of \$8,000; pays \$3,000 cash, and gives you drygoods and notions which you take at a value of \$2,000, with his note, endorsed by B, payable one year after date, for the remainder, which is immediately discounted at bank. Also name the accounts in which you would post this journalizing. 9. Your firm, in payment of its debt of \$25,000 to B & Co., for a lot of ground and buildings thereon, transfers a warehouse and the lot that it stands upon, at a value of \$12,000; pays \$3,000 cash; gives \$5,000 worth of tools and other articles, and the firm's note, payable in six months after date, for the balance. Specify your firm's ledger accounts in which this transaction would be posted (double entry), and make clear what would be the debits and credits.

SPECIAL INSPECTOR (H. P. F. S.),
DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.
\$1,000 per annum, February 26, 1912.

Experience—Weight 1.

(See page 215.)

Practical Questions—Weight 9.

1. Having received points for line and elevation of a pipe trench, what would be your duties during the excavation? 2. How should a joint in universal pipe be made? 3. What precautions would you take to lay a line of straight pipe in a trench previously prepared? 4. Describe refilling a pipe trench to secure the best results. 5. How would you provide for a fire hydrant connection to a pipe line? 6. How would you place a fire hydrant? 7. What records would you keep concerning

pipe laid in one city block? Assume conditions. 8. If a manhole has a concrete base, in the proportion of 1 part cement, 3 parts sand, 6 parts stone, how should the concrete be prepared? 9. What would be your duties regarding laying water pipe when a gas pipe crosses the trench? 10. If passing under a sewer, what care should be taken to preserve the safety of both structures?

SPECIAL INSPECTOR (H. P. F. S.),
DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.
\$1,000—\$1,200 per annum, October 15, 1912.

Experience—Weight 2.
(See page 441.)

Practical Questions—Weight 8.

1. Having located a range line, and elevations for excavation of a pipe trench, what would be your duties in order to know that the trench is excavated to the proper line? 2. How would you keep a record of pipe laid? 3. Describe the method of making a joint with bell and spigot pipe. 4. Describe the method of making a joint with universal pipe. 5. Describe the manner of blocking pipe. 6. What care should be taken regarding gas pipe and electrical conduits crossing the excavation for pipe line? 7. When excavating under a sewer, what precautions should be required of the contractor to avoid a break in the sewer? 8. What general regulations should be observed regarding storing of materials of the streets? 9. If the location for a fire hydrant is given, and wishing to continue the laying of pipe past that place, how would you provide for the hydrant connections? 10. Describe the method to be used in refilling a pipe trench.

ASSISTANT MEAT AND CATTLE INSPECTOR,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$1,000 per annum, July 8, 1912.

Experience—Weight 3.

(See page 215.)

Practical Questions—Weight 7.

1. Why is it desirable that animals be thoroughly bled when slaughtered? (a) Describe the appearance of a carcass that has not been thoroughly bled. (b) Name the causes of insufficient bleeding. 2. Name the lymph glands which should be cut or sectioned in post-mortem examination of an animal for the detection of tuberculosis. 3. What methods are used by butchers for the removal of evidence of tuberculosis from the inner surface of the thoracic and abdominal walls of a carcass? 4. Why is it necessary that a refrigerator should be ventilated? (a) How can insufficient ventilation be detected? 5. What appearances and conditions in the dressed carcass of a hog would indicate that it had been fed on garbage exclusively? 6. What is a puffed ham? What is the principal cause of this condition? (a) How would you detect it? 7. What physical signs would lead you to suspect the presence of tuberculosis? Actinomycosis and hog cholera in the live animal? 8. Describe the lesions of caseous lymphadinitis, that may be detected on post-mortem examination. (a) In what species of meat-producing animals do you find this condition? 9. Describe the appearance of measles in pork and beef? 10. What conditions and appearances of dressed fowls in the market would lead you to condemn the same?

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ASSISTANT MEAT AND CATTLE INSPECTOR,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$1,000 per annum, December 6, 1912.

Experience—Weight 2.

(See page 441.)

Practical Questions—Weight 6.

1. How would you proceed to inspect a beef on the hoof? A sheep? A hog? 2. How would you detect cholera in a carcass? 3. (a) How would you inspect a smoked ham? What condition of importance to the inspector is most frequently found? (b) Under this condition, what disposition of the meat would you make? 4. Give the proper disposition of a well-nourished carcass of beef in which the following lesions were found: Slight calcified tubercular lesions. Small tubercular nodules in the liver. 5. How would you distinguish a carcass which died from natural death from one that was slaughtered? 6. What disposition would you make of a carcass on finding tumors? 7. (a) What are the causes and post-mortem symptoms of insufficient bleeding? (b) What are the objections to passing the flesh of such animals as suitable for food? 8. Give the procedure in examining a carcass for tuberculosis. 9. How would you recognize monkey veal: (a) in slaughter house? (b) in butcher shop? 10. What is local tuberculosis? (a) General tuberculosis? (b) What disposition of a carcass affected in either way would you make? 11. How does emaciation differ from leanness on post-mortem? 12. Give the provision of the pure food law on the use of benzoate of soda as a meat preservative.

Report Writing—Weight 2.

Write a letter in the form of a report of not less than 150 words to the Chief Meat Inspector on "The Proper

Sanitary Condition of a Retail Fish Market." In grading this report the following points will be considered: Subject matter presented, form, spelling, penmanship and grammar. Sign this letter "John Doe."

ASSISTANT MILK INSPECTOR,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$1,020 per annum, October 7, 1912.

Experience—Weight 2.

(See page 441.)

Arithmetic—Weight 1.

1. From a dairy of 50 cows, each averaging 30 pounds of milk daily, how many pounds of butter can be made per day, if the milk tests $4\frac{1}{2}$ per cent., and the "over-run" is $\frac{1}{8}$? 2. What is the "overrun" if 135 pounds of butter are made from 3,000 pounds of milk testing 4 per cent? 3. If 1,200 pounds of milk contain 4 per cent. of fat and the fat contains 40 per cent. palmitin, 34 per cent. olein, 10 per cent. myristin, 6 per cent. butyrim and 10 per cent. glycerides of other acids, determine the number of pounds of each fat constituent. 4. Find the amount of solids, not fat, and the total amount of solids in milk which contains 3 per cent. of fat, and which shows a lactometer reading of 27. (Formulas:

$$\text{Solids not fat} = \frac{1}{4} L + .2 f$$

$$\text{Total solids} = \frac{1}{4} L + 1.2 f$$

L = Lactometer reading.

f = Per cent. of milk fat.

5. Given the formula:

$$\text{Per cent. of acid} = \frac{\text{No. cc of alkali} \times .009}{\text{No. cc of sample of milk}} \times 100.$$

Find the per cent. of acid in milk when 40 cc of alkali are used with 50 cc of the milk.

Practical Questions—Weight 5.

1. What are the chemical constituents of milk and what variation in these is permissible in good milk? What are the causes of variations in these constituents? 2. Describe and draw a sketch of a lactometer and explain clearly its use. 3. Name four milk preservatives. State the purpose of and objections to each. 4. Describe the Babcock method of testing milk, and state its purpose. 5. What is rennet extract? How is it made. Of what use is it in testing milk? 6. What is oleomargarine? Give a simple test to show the difference between oleomargarine and pure butter. 7. Describe a chemical test to determine the presence of bichromate in milk? 8. How can you determine the presence of coal tar dyes in milk?

Report Writing—Weight 2.

Write a report, about 200 words, to the Chief of the Bureau of Health, on the subject: "The Proper Handling of Milk—From the Dairy to the Doorstep." Substance, penmanship, spelling, form, etc., will be considered in grading this report.

NUISANCE INSPECTOR,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$1,100 per annum, February 27, 1912.

NOTE.—The questions for this examination were the same as those for Inspector, Bureau of Water, Department Public Works—\$1,000 per annum, February 27, 1912. (See page 469.)

PIPE INSPECTOR,
DEPARTMENT PUBLIC SAFETY, BUREAU OF FIRE.
\$900—\$1,000 per annum, December 6, 1912.

Experience—Weight 1.

(See page 441.)

Arithmetic—Weight 2.

1. What will be the net price of 1,250 pounds of lead pipe at $8\frac{1}{2}$ cents per pound, allowing a discount of 4 per cent? 2. A car contains 2,460 feet of 9-inch pipe, weighing 32.5 pounds per foot. What will be the freight charges at 35 cents per hundred pounds? 3. A cylindrical tank 10 feet in diameter and 15 feet deep is $\frac{2}{3}$ full of flux. How many gallons does it contain. (Gallon = 231 cubic inches.) 4. A contract calls for 150 pieces of standard pipe, average weight 1,400 pounds each; two $\frac{1}{8}$ bends, weight 1,140 pounds each; two $\frac{1}{16}$ bends, 960 pounds each, and two reducers, weight, 815 pounds each. If the standard pipe cost \$35 per ton and the special castings \$90 per ton, find the entire cost of the lot.

Practical Questions and Test—Weight 7.

1. Describe fully the proper method of preparing the mould for a large straight pipe to get the best casting. 2. In what position should large pipes be cast? Why? 3. Describe the qualities required for cast iron for large pipes in: (a) external appearance of castings; (b) internal structure, as shown when broken. 4. What are "Test Pieces"? How are they taken from each run of iron and how tested? 5. What is the effect on cast iron of repeated re-melting? What of prolonged fusion? Can either be overdone? 6. Name five (5) likely defects in a large cast-iron pipe, and state in detail how you would detect them. 7. In pouring the casting for a large pipe, describe every precaution that should be taken in order to get the best results. 8. What advantage has wrought

iron over steel pipes? 9. State how you would recognize cast-iron pipes, steel pipes, and wrought-iron pipes. 10. Describe completely the factory test for wrought-iron pipes, for steel pipes.

POLE INSPECTOR,
DEPARTMENT PUBLIC SAFETY, ELECTRICAL BUREAU.
\$4.00 per day, December 10, 1912.

Experience—Weight 2.
(See page 441.)

Practical Questions—Weight 6.

1. When is an iron electric light pole in a dangerous condition? What can be done to make such a pole safe without supplying a new pole? 2. What would be your method of inspection of: (a) iron poles? (b) wooden poles? 3. Give the kinds of timber used in wooden poles, and state how long such poles will last under ordinary conditions. 4. Explain the various conditions that lengthen or shorten the life of a wooden pole. 5. Give the length of the life of an iron pole and explain the various conditions that affect it. 6. State specifically what conditions would cause you to consider a wooden pole in a dangerous condition? 7. Give the cost respectively of wooden and iron poles, and show why one is cheaper than the other, considering its length of service. 8. Explain the various ways of treating wooden poles before setting them which tend to lengthen their period of service, and point out which is the best way. 9. How is a corner pole set where the direction of the wires change? 10. What parts of a wooden pole would first show decay? What tools, if any, would you need to ascertain such conditions?

Report Writing—Weight 2.

Suppose you found a wooden pole in a dangerous condition. Assume such conditions as you wish and write a full report to the Chief of the Electrical Bureau, explaining the condition and causes and making recommendations. Sign this report "John Doe." Ideas presented, spelling, penmanship and form will be considered in marking this report.

SMOKE INSPECTOR,
DEPARTMENT PUBLIC SAFETY,
BUREAU OF STEAM ENGINES AND BOILERS.
\$1,200 per annum, October 15, 1912.

Experience—Weight 3.

(See page 441.)

Practical Questions—Weight 4.

1. Mention three kinds of mechanical stokers and describe one of them. 2. Describe in detail a down-draft furnace, and explain its efficiency in preventing smoke. 3. Explain the structure and use of: (a) coking arches; (b) baffle plates; (c) dead plates. 4. Explain three systems of hand firing, and compare their efficiency in the prevention of smoke. 5. Explain the carbon dioxide test of efficiency in firing. 6. What rules would you suggest for firemen concerning: (a) starting of fire; (b) time of firing; (c) size of coal; (d) distribution of coal on bed; (e) amount of coal put on fire; (f) opening of fire door? 7. Name five constituents in smoke. What is the per cent. of volatile matter in anthracite coal? In bituminous coal? 8. Compare the advantages and disadvantages of mechanical stoking and hand firing. 9. How are steam jets used in preventing smoke? 10. What type of boiler produces the most smoke? Why? 11. What is the Ringelman scale, and how is it used? 12.

Name five kinds of bituminous coal and arrange them in order of their smoke-producing qualities.

Regulations—Weight 1.

1. What is the greatest degree of darkness of smoke permitted in Philadelphia? How is the degree of darkness to be determined and under what conditions may the limit be exceeded? 2. Explain in detail the color scale of measurement used in Philadelphia. 3. When and why are the Philadelphia smoke regulations suspended? 4. If, without having received complaints from neighbors, you detected a factory that was violating the smoke ordinances, explain, step by step, what course of action you would take.

Report Writing—Weight 2.

Write a letter to the Chief of the Bureau of Boiler Inspection, about 300 words, on the subject: "Philadelphia's Smoke Problem." Substance, form, penmanship, spelling, etc., will be considered in grading this paper.

INSPECTOR OF STEEL,
DEPARTMENT WHARVES, DOCKS AND FERRIES.
\$1,800 per annum, February 28, 1912.

Experience—Weight 2.5.

(See page 215.)

Practical Questions—Weight 7.5.

1. Describe the duties of the inspector at the mill and at the shop, and state what reports should be made to cover such work. 2. Describe briefly the duties of the field inspector. 3. Give draft of an approved form of mill test report. 4. Define and give the numerical values for the following terms referring to structural steel: The elastic limit, the ultimate strength. Give standard chemical and physical properties of structural steel, rivet steel,

steel castings, as to per cent. of phosphorus and sulphur, ultimate tensile strength, elongation, cold bends, kind of fracture. 5. What is the effect of a high percentage of carbon in the manufacture of steel? Phosphorus? Sulphur? Manganese? 6. How often should the chemical test be obtained, and how, in general, should the test specimens be obtained for tensile and bending tests on plates, shapes and bars, and tensile test on castings? 7. Give the usual requirements as to punching and reaming, with respect to thickness of plates, and why is reaming done? 8. How would you make a quench bend test? 9. What is steel? Give three (3) principal methods of manufacture by name, and three (3) general classes into which steel is divided. 10. Suppose a nicked specimen is bent to the breaking point, what fracture should it show? Draw and mark a specimen to be used to test for elongation. 11. What flaws would you expect to find due to defective rolling? 12. Sketch three (3) typical connections of an I-beam to a plate girder. 13. What constitutes a good rivet, and by what method would you test rivets in field connections for defects? 14. What precautions should be taken in fabrication and erection? 15. What is meant by annealing? Give brief description of process. How would you test a cast-steel column base and a hollow-cast column?

ASSISTANT TENEMENT HOUSE INSPECTOR,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$1,200 per annum, October 10, 1912.

Experience—Weight 2.

(See page 441.)

Arithmetic—Weight 1.

1. What will be the cost of carpeting a room with matting one yard wide at 40 cents a yard, the room being

18 feet wide and 27 feet long? 2. How many adults will a room 18 feet long, 15 feet 4 inches wide, and 10 feet 6 inches high accommodate, allowing 400 cubic feet of space to each person? 3. Two adults and three children under ten years of age are living in an apartment of three rooms, the dimensions of each room being $10\frac{1}{2}$ feet long, 10 feet wide, and 7 feet high. If the law allows 400 cubic feet of air for each adult and 200 cubic feet of air for each child, how many additional adults could be accommodated in the rooms, using each room for a sleeping room? 4. The total deaths from diphtheria in a certain city during 1910 were 3,228, and in 1911, 2,140; what was the per cent. of decrease in the number of deaths? 5. Assuming that there are 3,000 tenement houses in Philadelphia, and that each house is to be inspected every three months, how many inspectors should the city employ, provided each inspector can inspect on an average of 15 houses per day, and works 300 days per year? 6. A room 20 feet long, 15 feet wide, 9 feet high at one end and 7 feet high at the other, contains how many cubic feet of air space? How many adults will it accommodate, allowing 400 cubic feet of air space for each adult?

Laws and Regulations—Weight 1.

1. Under what conditions may a cellar of a tenement house be used for sleeping purposes? 2. Under what conditions may a room in a tenement house be used for living purposes, if it does not have a window, opening on an area, yard, alley or street? 3. What are the regulations concerning water closets in a tenement house? 4. What are the regulations concerning the papering and painting of rooms in tenement houses? 5. What is the difference between a tenement house and a lodging house? 6. How often must a tenement house license be renewed,

and how must it be displayed? 7. Under what conditions may a tenement-house license be revoked? 8. What information concerning lodgers in a lodging house must be kept by the licensee?

Practical Questions—Weight 4.

1. What are the essential things to be noted in the inspection of a room in a tenement house? 2. How should the hall of a tenement house be lighted? 3. What are the most common violations of the tenement-house regulations concerning: (a) roof; (b) sinks; (c) yards; (d) ventilation and lighting; (e) air space per capita? 4. What is the effect of the tenement-house regulations on: (a) the income of the landlord; (b) the rent paid by occupants; (c) the general public? 5. What are the most common methods of evading the tenement-house regulations? 6. Explain in detail an effective method of locating the unlicensed tenement houses in Philadelphia. 7. If a charitable organization offered to build tenements in Philadelphia to accommodate 100 families, where would you suggest that they be built, and what kind? Give details and reasons? 8. In a three-story tenement, each floor containing four apartments and each apartment occupied by a family of five, what plumbing, including fixtures, is necessary? Give details of size, character and location.

Report Writing—Weight 2.

Write a report of not less than 300 words to the Chief of the Bureau of Health on "The Lodging House Problem of Philadelphia." Substance, form, penmanship, spelling, etc., will be considered in grading this report.

MEDICAL SERVICE

Experience Sheet for Medical Service.

1. Give the names and addresses of two reputable citizens who will vouch for the truth of your answers on this paper. 2. What is your age? 3. What college or medical school have you attended and what degrees have you received? 4. When and where were you licensed to practice? 5. Has your practice of medicine been continuous since you were licensed? If not, give details of your other work (nature, dates, salaries, etc.) 6. What has been the extent of your hospital experience? 7. Have you specialized in any branch of medicine or surgery? If so, give details.

AGENT, PREVENTION OF DISEASES,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$1,500 per annum, October 2, 1912.

Experience—Weight 3.

(See page 494.)

Practical Questions—Weight 5.

1. What steps should be taken to protect a community against an epidemic of plague (Bubonic)? 2. What, in your opinion, is the best means of combating syphilis and gonorrhea? 3. Describe the Mandel theory of heredity. What is the most promising proposed means of combating increase of insanity, or what would you suggest, and why? 4. What means would you take to elicit the necessary information to compile morbidity statistics in children, especially in contagious conditions? 5. Outline scope and authority of housing and building commissions in regard to public health. 6. What are the impure air diseases and how can a city official combat them? 7. What means

are there for insuring the purity of the milk supply to the individual?

Report Writing—Weight 2.

Write a report to the Director of the Department of Public Health and Charities, showing in what way mortality statistics can be made most complete and in what way useful.

THIRD ASSISTANT APOTHECARY,
DEPARTMENT HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$500 per annum, July 10, 1912.

Experience—Weight 3.

(See page 494.)

Practical Questions—Weight 7.

1. Define the term aqua, as applied to official waters. Give modes used in making them. 2. Give official name and constituents of paregoric, chalk mixture, Huxham's Tincture of Barks, Turlington's Balsam. 3. Outline and explain the U. S. P. assay of Liq. Formaldehyde. 4. Phenol. How is it obtained? In what form does it appear on the market? Give antidotes. 5. Distinguish between a chemical and physiological antidote. Give examples. 6. In what drugs are the following active principles found: Eserine, pilocarpine, chrysarobin, euonymin, leptandrin, pelleterine, sanguinarine? Which are alkaloids and which glucosides? 7. How would you prepare an emetic made from mustard? Sulphate zinc? Ipecac? 8. Name antidotes for matches, chloral hydrate, arsenic, laudanum. 9. Give chemical formula for mercuric chloride and mercurous chloride. What are the common names and doses of each? 10. Give botanical names, habitat and medical properties of flaxseed. How much oil should

it contain? What is carron oil? How prepared and for what used? 11. What is the U. S. P. percentage of morphine in opium? Name several preparations of opium that are official with percentage of opium in each. 12. Give outline of the Pennsylvania law regulating the sale of cocaine.

ASSISTANT, ANTITOXIN LABORATORY,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$1,000 per year, October 3, 1912.

Experience—Weight 4.

(See page 494.)

Practical Questions—Weight 6.

1. Dunham's peptone solution. How to make it and for what is it used? For what is dextrose broth used?
2. What are the usual evidences of mould contamination of media before and after inoculation, and what steps should be taken to prevent it?
3. What media is used for the making of diphtheria toxin? State in detail its preparation.
4. Name methods for obtaining the serum from infected horses, and preliminary steps to prepare that serum for the concentrating antitoxin process.
5. Give the methods for testing toxin and antitoxin to determine the units per c.c.
6. What laboratory method is used for the determination of typhoid? State what laboratory apparatus is necessary for the completion of the test.
7. Give the methods for testing disinfectants.
8. Give the bacterial methods for the examination of milk. State in detail the apparatus necessary for the completion of both.
9. What are bacterial vaccines? Give usual method of preparation of typhoid vaccine.
10. What precautions should be taken in a laboratory working with cholera and plague?

ASSISTANT MEDICAL EXAMINER,
CIVIL SERVICE COMMISSION.
\$900 per annum, June 4, 1912.

MEDICAL EXAMINER, CIVIL SERVICE COMMISSION.
\$1,600 per annum, June 4, 1912.

Experience—Weight 1.5.

(See page 494.)

Personal Fitness—Weight 1.5.

Each candidate was interviewed personally by the special examiners in charge of this examination.

Practical Questions—Weight 6.

Answer any five of the following seven questions: 1. Compare the difference of blood pressure and pulse rate in the recumbent and standing postures. What variations from the normal should influence you in accepting or rejecting a candidate? 2. What considerations would induce you to accept or reject certain candidates who are at the limit for overweight? 3. How would you determine the impairment of efficiency caused by flat foot, bunions, ingrowing nails? 4. Differentiate the syphilodermata from benign lesions that simulate them. 5. At what points would you examine for hernia, and what would be your procedure? 6. What conditions of the teeth would lead you to reject a candidate, and why? 7. What are the symptoms and physical signs of incipient phthisis?

Report Writing—Weight 1.

Mr. Blank has been rejected for varicose veins and ulcer of the leg. He has protested his rejection to the Commission, and his letter has been referred to you. Write an official reply to the Commission justifying your decision. Mechanical arrangement, adherence to the subject, and expression will be considered in marking this

subject. Do not sign your name to the letter; use your examination number instead.

CLINICAL ASSISTANT PHYSICIAN, PHILADELPHIA HOSPITAL FOR INSANE,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$600 per annum, October 3, 1912.

Experience—Weight 4.

(See page 494.)

Practical Questions—Weight 6.

1. Give your method of examining a suspected insane patient. 2. In what class of insane patients is hydrotherapy useful and describe methods of employing it? 3. Differentiate between dementia precox and maniac depressive insanity. 4. Give principal pathologic changes in paralytic dementia. 5. Name four drugs useful in acute mania with doses of each. 6. Differentiate between acute alcoholic mania and delirium tremens. 7. Describe hysteria and psycasthenia. 8. Describe a method of treating one of them. 9. Give symptoms of semi-dementia. 10. Where is the motor speech center situated, and what is the difference between sensory and motor aphasia?

DENTIST,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$700 per annum, July 5, 1912.

Experience—Weight 2.

1. For what position do you apply? 2. Give the day, month and year of your birth. 3. With respect to your general professional education, state fully names of schools and colleges you have attended and courses of study in

each. 4. How long have you practiced your profession? Give the positions or offices in which you have worked. 5. State any additional facts not covered by the foregoing questions which might show your fitness for the position for which you apply.

Practical Questions—Weight 5.

1. (a) Give short description of the maxillary bones. (b) Name the important muscles of mastication. (c) Name the salivary glands, and give their location. (d) What are the principal constituents of the saliva? 2. (a) How many teeth are in the deciduous set? (b) What is the age when deciduous dentition is complete? (c) How many teeth are in the permanent set? (d) What is the age at which each tooth erupts? (e) Give the age of the completion of the development of the roots of the permanent set of teeth. 3. (a) What is the position of the upper first permanent molar in its relation to the lower molar when in proper occlusion? (b) Why is its retention important to the proper development of the dental arch? 4. (a) What treatment should be given to incipient caries? (b) Give in detail the preparation of a cavity for filling on the masticating surface of the molars. (c) Give in detail the preparation of cavities for filling on the approximal surfaces of the bicuspid and molars. (d) Describe the technique and factors which determine the direction of force employed in the extraction of an upper first molar, an upper canine and a lower molar. 5. What effect on the pulp has abrasion and caries and how is such action brought about? (b) What treatment should be given to pulps nearly exposed? (c) What would be your treatment of pulps fully exposed but not suppurating? 6. (a) How would you anesthetize a pulp for immediate extirpation? Give process in detail. (b) Give in detail process for devitalization of pulp with arsenious acid. (c) What is the

treatment of cases of necrosis due to arsenious acid coming in contact with soft tissues? (d) What is an antidote for arsenious acid? (e) Why should arsenious acid not be used in deciduous teeth? 7. (a) What is the most frequent cause of apical pericementitis? (b) If not arrested, to what will it lead? (c) Give in detail the treatment of roots having putrescent pulps, and method of filling same. (d) Give treatment of incipient abscess. (e) Give treatment of chronic abscess. (f) In cases of chronic abscesses with necrosis of the bone, what are the indications that necrosis exists? 8. (a) What are the differential diagnostic symptoms of exposed pulps and when a pulp is partially dead? (b) What are the symptoms of pericementitis? (c) Give some of the methods of obtunding sensitivity of dentine. 9. (a) What materials should be used for filling deciduous teeth? (b) How would you treat root canals of the deciduous teeth? (c) What are the root canals of the deciduous teeth? (c) What are the reasons, if any, for saving the deciduous teeth? 10. (a) Where and under what circumstances should oxy-phosphate of zinc be used for filling; also when amalgum and when gutta percha? (b) What is an efficient method for treating post-operative hæmorrhage following tooth extraction? (c) What is exostosis? (d) Why should teeth be restored in contour so that they will be in approximate contact as in normal arches?

Penmanship—Weight 1.

Composition—Weight 1.

Spelling—Weight 1.

These subjects will each be graded upon the written work of the applicant.

DISTRICT POLICE SURGEON,
DEPARTMENT PUBLIC SAFETY, BUREAU OF POLICE.
Salary in fees, December 16, 1912.

Experience—Weight 3.

(See page 494.)

Technical Knowledge—Weight 7.

1. Give the differential diagnosis of heat exhaustion and sunstroke, with treatment. 2. Give differential diagnosis of the following: Uremic coma, alcoholic coma, diabetic coma, gas poisoning, opium poisoning, fracture of the skull. 3. Distinguish between delusion and illusion. Describe paranoia. 4. What are the early signs of pregnancy? What and when are the earliest positive signs of pregnancy? 5. Differentiate perforating ulcer, appendicitis and extra-uterine pregnancy. 6. Give the treatment of burns and smoke injuries about the mouth and eyes. 7. Give the treatment of poisoning by lysol, ammonia, Rough on Rats, bichloride of mercury and illuminating gas. 8. Differentiate cerebral compression, concussion and hysteria. 9. Give the treatment of shock. 10. What are the duties of a police surgeon called to the collapse of a crowded grand stand where there are 50 injured?

DRUGGIST,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$600 per annum, December 13, 1912.

Experience—Weight 3.

(See page 494.)

Technical Knowledge—Weight 7.

1. Give the table of apothecary's weight and a method of converting into the metric system. 2. Describe the preparation of (a) tr. nux vomica, (b) elixir ferri quininæ et

strychnina. 3. Name and define the kinds of incompatibilities with an example of each. 4. Point out the incompatibilities in the following prescriptions: (a) Acid hydrochloric dil., f³ij; argenti nitrat, gr. iij; ess. pepsini qs. ad., f³ ij; (b) antipyrini, ʒj; sodii salicylatis, ʒj; M. et ft. pulv. no. xii. 5. What is the maximum therapeutic dose of each of the following: Amyl nitrite, chloral hydrate, spartein sulphate, eserine salicylate, potassium permanganate, tinc. of gelsemium, heroin, acetphenetidin, tinc. of digitalis, hyoscine hydrobromate. 6. Describe the appearance and give the degree of solubility of each of the following: Sodium benzoate, ferri et quininae citrate, ichthyol, bismuth subgallate, pepsin. 7. Give the official names of the following: Fowler's solution, Tartar emetic, Hoffman's anodyne, Rochelle salts, Gray powder. 8. Name the official preparations of hyoscyamus. 9. Describe in detail the process of trituration and percolation. 10. Name the official alkaloidal preparation of (a) belladonna, (b) opium, (c) hydrastis.

ASSISTANT MEDICAL INSPECTOR (ALLOPATHIC AND HOMEOPATHIC), DEPARTMENT HEALTH AND CHARITIES, BUREAU OF HEALTH.

\$1,400 per annum, March 4, 1912.

Experience—Weight 2.

(See page 494.)

Technical Knowledge—Weight 8.

1. What are the symptoms of acute anterior poliomyelitis? 2. Give differential diagnosis between hæmoptysis and hæmatemesis. 3. What are the symptoms and sequelæ of phlyctenular conjunctivitis and of trachoma? 4. Describe briefly the routine procedure following information that a house occupied by several families is infected with diphtheria; also describe method and period of quarantine

and method for disinfection. 5. Outline a sanitary inspection of a tenement house, which has been reported in an unsanitary condition. 6. State period of incubation of each of the following diseases: (a) Measles, scarlet fever, smallpox and chicken-pox. (b) Describe the characteristic eruption of above named diseases. (c) State day after onset of above named diseases on which eruption appears. 7. How long would you consider persons should be isolated after having the following diseases: Chicken-pox, smallpox, measles, mumps, scarlet fever and diphtheria? 8. Briefly outline what you consider should be the qualifications and routine duties of an Assistant Medical Inspector.

Experience Sheet for Nurses.

1. Give the names and addresses of two reputable citizens who will vouch for the truth of your answers on this paper. 2. What is your age? 3. What has been the extent of your general education (grammar school, high school and college)? Give the names and location of the schools. Did you complete the course? If not, why not? 4. Where and when did you receive your training in nursing? Have you been regularly employed as a nurse since your graduation? If not, why not? 5. Are you a registered nurse in Pennsylvania? 6. What has been the extent of your hospital experience? 7. Have you ever held any other position except as nurse? If so, give details. 8. Have you specialized in one particular kind of nursing? If so, what? 9. Give the names and addresses of five doctors for whom you have worked and whom you are willing to have consulted as references.

HEAD NURSE, PHILADELPHIA GENERAL HOSPITAL
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$25 to \$50 per month, February 29, 1912.

Experience—Weight 2.

(See page 503.)

Arithmetic—Weight 1.5.

- | | | | |
|--------------|--------|--------------|----------|
| 1. Add: | 678945 | 2. Subtract: | 98730431 |
| | 368567 | | 43612014 |
| | 983214 | | <hr/> |
| | 765438 | | |
| | 365472 | | |
| | 998635 | | |
| | <hr/> | | |
| 3. Multiply: | 87654 | | |

	463	4. Divide:	96543 by 9.

5. Give the apothecary table used in compounding medicines.

Practical Questions—Weight 5.

1. State briefly the duties that a head nurse may be called upon to perform. Under what circumstances would you consider it advisable to recommend changes in diet for patients in a department assigned to your charge?
3. What is the range of temperature in disease? State some causes of high and low temperature.
4. What is meant by a stimulant? By a sedative? Give the names and doses of some drugs used as such:
5. What important rules are to be observed when giving medicine?
6. What is a medicinal dose of sal Rochelle? Of sodium salicylate? Of aspirin? Of aconite?
7. How would you prepare a patient about to be operated upon for appendicitis?
8. Describe some methods used in making patients comfortable.
9. How would you give a cold pack to a typhoid patient

who had a hemorrhage and could not be moved? 10. Describe the care of the mouth in febrile diseases. 11. What methods may be used to keep the sick room cool? 12. Describe dry cupping. 13. How much carbolic acid should be added to a quart of water to make 1:40 solution? 14. What is: (a) the Trendlenburg position? (b) The Sims position?

Spelling—Weight 1.5.

1. Economy. 2. Sanitary. 3. Demonstration. 4. Physician. 5. Institution. 6. Interne. 7. Admission. 8. Contagious. 9. Ventilation. 10. Bacteria. 11. Diphtheria. 12. Antitoxin. 13. Sputum. 14. Malaria. 15. Tubercle. 16. Decline. 17. Presence. 18. Diagnosis. 19. Equip. 20. Patient.

HEAD NURSE, PHILADELPHIA GENERAL HOSPITAL,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

Salary, \$25 to \$50 per month, July 25, 1912.

Experience—Weight 3.

(See page 503.)

Practical questions—Weight 7.

1. Give your ideas of the duties of a head nurse with relation to (a) her superiors, (b) her subordinates, (c) patients. 2. Give in detail the method of giving a hypodermic injection with reasons for all precautions. 3. Give all the ways of taking the body temperature in the order of their accuracy. 4. What directions would you give pupil nurses applicable to medicines administered by mouth? 5. In what conditions is entero-clysis useful, and describe the method of its employment? 6. What measures should be taken to contribute to the comfort of a patient suffering with fracture of the thigh? 7. Give

antidotes for tincture iodine, carbolic acid, morphine sulphate. 8. How should a 24-hour specimen of urine be collected? 9. How should a patient be prepared for laparotomy and nursed afterwards? 10. How should a tuberculosis ward be managed with regard to the prevention of the spread of the disease?

HEAD NURSE, PHILADELPHIA HOSPITAL FOR CONTAGIOUS DISEASES, DEPARTMENT PUBLIC HEALTH AND CHARITIES, BUREAU OF HEALTH.

\$600 per annum, February 29, 1912.

Experience—Weight 2.

(See page 503.)

Arithmetic—Weight 1.5.

(Same questions as for HEAD NURSE, PHILADELPHIA GENERAL HOSPITAL, February 29, 1912. See page 504.)

Practical questions—Weight 5.

1. What is the appearance of a child in the early stages of measles? of scarlet fever? 2. Give the symptoms and nursing treatment of shock. 3. What important rules are to be remembered regarding the giving of medicine? 4. What should be done in a contagious ward to prevent the spread of a disease? 5. Why is "forced feeding" sometimes desirable in treating pulmonary tuberculosis? 6. What diet should be given after an attack of acute gastritis: (a) As inflammation abates? (b) During convalescence? 7. What important measures are to be observed in the care of fever patients, and state why they are necessary? 8. How would you give a tub-bath for reducing temperature? How would you give a sponge bath? 9. What care should be given bed-pans and like utensils? 10. What are the special points to be considered in the nursing of scarlet fever, and why are they

of importance? 11. Inasmuch as you have in your charge a number of employees, what would be your method of discipline? 12. What is (a) Asepsis? (b) Antisepsis? 13. What are the symptoms of inflammation? 14. Why is ventilation necessary? 15. Name three disinfectants used in cleaning and give the strength used of each.

Spelling—Weight 1.5.

Same words as for HEAD NURSE, PHILADELPHIA GENERAL HOSPITAL, February 29, 1912. See page 505.)

HEAD NURSE, PHILADELPHIA HOSPITAL FOR CONTAGIOUS DISEASES, DEPARTMENT PUBLIC HEALTH AND CHARITIES, BUREAU OF HEALTH.

\$600 to and including \$900 per annum, July 25, 1912.

Experience—Weight 3.

(See page 503.)

Practical Questions—Weight 7.

1. Give your understanding of the duties of a head nurse with relation to (a) her superiors, (b) her subordinates, (c) patients. 2. Give in detail the method of giving a hypodermic injection, with reasons for all precautions. 3. What are the ways of taking the body temperature in the order of their accuracy. 4. What directions would you give pupil nurses applicable to the giving of medicines by mouth? 5. Give antidotes for tincture iodine, carbolic acid, morphine sulphate. 6. How should a 24-hour specimen of urine be collected? 7. Describe the measures taken in a diphtheria ward to prevent the spread of contagion. 8. What complications should be watched for in small-pox, scarlet fever, and diphtheria cases, and what means, if any, may be taken to prevent them? 9. What is the most likely source of contagion in scarlet fever? 10. What

would you do before the arrival of the physician in a case of sudden heart weakness developing in a case of diphtheria?

HEAD NURSE, PHILADELPHIA HOSPITAL FOR CONTAGIOUS
DISEASES, DEPARTMENT PUBLIC HEALTH AND
CHARITIES, BUREAU OF HEALTH.
\$600 to \$900 per annum.

HEAD NURSE, PHILADELPHIA GENERAL HOSPITAL,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.
\$300 to \$600 per annum, December 13, 1912.

Experience—Weight 4.

(See page 503.)

Technical Knowledge—Weight 6.

1. Describe the various articles of linen used in a ward of 25 beds and the amount of each article.
2. Describe the methods used in keeping a ward clean and orderly.
3. Describe a method of making a bed with a patient in it.
4. Describe the Brandt bath.
5. What is the normal temperature, pulse and respiration of (a) an adult, (b) of an infant one month old.
6. Describe the method of making a normal salt solution.
7. Of what conditions in a typhoid patient would you have the resident physician immediately notified?
8. How would you prepare for a gastric lavage?
9. What immediate measures would you take in the following emergencies: Asphyxia, convulsions, syncope, shock?
10. Describe the care of a patient after a perineorrhaphy or after a tracheotomy.

INTERNE, PHILADELPHIA GENERAL HOSPITAL,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

No salary, March 23, 1912.

Experience—Weight 2.

1. Give examination number. 2. Give name in full. 3. Give your present address. 4. Where were you born? 5. What is your age? 6. How long have you lived in Philadelphia? 7. Have you attended a high school, preparatory school or college? If so, state name of same and give date of graduation. 8. Give the name of the medical college or university you are attending. 9. Have you attended the special course on contagious diseases or attended the ward classes at Municipal Hospital? 10. Have you had practical experience in the management of labor? If so, state number of cases. 11. If you successfully pass the Civil Service examination and are appointed Interne of the Philadelphia Hospital, do you promise to accept the appointment? 12. Are you in good physical condition and capable of undertaking and performing the active and exacting routine duties as Interne in the Philadelphia Hospital? 13. Give the names and addresses of three physicians and three laymen for reference.

Technical Knowledge—Weight 8.

1. What are the symptoms of acute anterior poliomyelitis? Give pathology briefly. 2. What are the symptoms and sequelæ of phlyctenular conjunctivitis and of trachoma? 3. Describe in detail the preparation of a patient for amputation of the hip joint, and give a brief description of the operation. 4. Give briefly the symptoms of stone in the gall bladder. Describe the operation and post-operative treatment. 5. Name symptoms of impending eclampsia and give preventative treatment. 6. Give

differential diagnosis between pelvic abscess and extra uterine pregnancy, and outline in detail the treatment of one of these conditions. 7. Describe in detail routine methods for exterminating both flies and mosquitoes in an infected district in or adjacent to a municipality of the first class. 8. What is an autogenous vaccine? Outline a suitable case for vaccine treatment; and describe method of preparation and amount and method of administration. 9. Give symptoms, differential diagnosis and treatment of infantile scurvy. 10. Give symptoms and treatment of acute croupous pneumonia.

ASSISTANT MALE PHYSICIAN,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$1,000 per annum, July 9, 1912.

ASSISTANT RESIDENT PHYSICIAN,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$800 to less than \$1,000 per annum, July 9, 1912.

Experience—Weight 3.

(See page 494.)

Practical Questions—Weight 7.

1. Differentiate typhoid fever in the first week and croupous pneumonia before the physical signs in the chest have appeared. 2. Name three stimulants useful in a progressively increasing cardiac weakness occurring in the course of an infectious disease, and the method of administration of each. 3. Differentiate thermic fever from heat prostration and point out the differences in treatment. 4. Give the average adult dose of the following drugs and one use for each: Arsenic trioxide, tincture of gelsemium, hyoscyne hydrobromide, ergotin, nitroglycerine, apomor-

phine hydrochloride. 4. Give a treatment of a fracture of the neck of the femur. 5. Differentiate paresis, alcoholic insanity and cerebral arteriosclerosis. 7. Give the antidotes for morphine sulphate, tincture of iodine, carbolic acid and atropine sulphate. 8. Give the symptoms, physical signs, diagnosis and treatment of a case of erysipelas. 9. Give the differential diagnosis of the coma of nephritis, diabetes, cerebral hemorrhage, morphine and alcohol poisoning. 10. Name five acute painful affections of the abdomen and give differential diagnosis in each case.

ASSISTANT MALE PHYSICIAN,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$1,000 per annum, December 13, 1912.

Experience—Weight 4.

(See page 494.)

Technical Knowledge—Weight 6.

1. Name three serious complications of typhoid fever, with appropriate treatment. 2. What is Lenhartz diet and for what used? 3. Give symptoms and course of Brill's disease. 4. Describe Kocher's method of reduction of a dislocation of the shoulder joint. 5. What are the average doses of the following drugs and give a use for each: Apomorphine hydrochlorate, theobromine and sodium salicylate, trional, spiritus glonoin, sodium cacodylate, syrup of iodine of iron, guaicol carbonate. 6. Give differential diagnosis between tubercular meningitis, epidemic cerebro-spinal meningitis and serious meningitis (Quincke's disease). 7. How would you treat a case of delirium tremens during and after the attack? 8. Give the structures to be avoided in opening a palmar abscess, and the technique of the operation. 9. Give the symptoms

and pathology of Stokes-Adams disease or heart block.
 10. Describe the blood picture in the case of splenomedullary leukemia and the method of staining and counting the leucocytes.

OUTDOOR PHYSICIAN (ALLOPATHIC AND HOMEOPATHIC),
 DEPARTMENT PUBLIC HEALTH AND CHARITIES,
 BUREAU OF CHARITIES.

\$360 per annum, March 4, 1912.

Experience—Weight 2.

(See page 494.)

Practical Questions—Weight 8.

1. What are the indications for the administration of diphtheria antitoxin? Give technique of injection, manner of determining dosage and necessity for repeating same. 2. Give differential diagnosis between uræmia, cerebral apoplexy and alcoholism. 3. If you were called to a house and found a child with acute nephritis, what line of investigation would you follow and what treatment would you adopt? 4. On what symptoms and signs would you base a diagnosis of appendicitis in a child? What other conditions would you consider in reaching a diagnosis and how would you differentiate them? What would be your advice as to (1st) The necessity of operation and (2d) if advised, the time of operation in relation to the stage of the disease? 5. Define in every detail the procedure which should follow the discovery of a case of diphtheria in a house occupied by several families. 6. Briefly state what you consider should be the qualifications and duties of an Outdoor Physician.

OUTDOOR PHYSICIAN,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$360 per annum, December 16, 1912.

Experience—Weight 3.

(See page 494.)

Technical Knowledge—Weight 7.

1. What emergency expedients would you use if called in the second stage of a labor to a primipara in the slums in order to prepare the field of operation? 2. Give the treatment of mastitis. 3. Give diagnosis of cancer of the nipple. 4. Give diagnosis of incipient tuberculosis. 5. Diagnose senile dementia. 6. Differentiate scarlet fever, measles, chicken-pox. 7. Diagnose incipient cataract, trachoma and purulent tear duct. 8. Diagnose incipient coxalgia. 9. Give treatment of gonorrheal ophthalmia in the right eye. 10. Give diagnosis, prognosis and treatment of an intra-capsular fracture of the neck of the femur in a woman of 80.

ASSISTANT PHYSICIAN,
DEPARTMENT PUBLIC HEALTH AND CHARITIES.

\$600 per annum, December 13, 1912.

(Same as ASSISTANT MALE PHYSICIAN, page 511.)

ASSISTANT PHYSICIAN, INSANE DEPARTMENT,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$800 and \$1,000 per annum, March 4, 1912.

Experience—Weight 2.

(See page 494.)

Practical Questions—Weight 8.

1. Give the differential diagnosis between paresis and paranoia. 2. Under what conditions would you use me-

chanical restraint of insane persons? 3. Which is the better in persons who are acutely violent, mechanical restraint or the use of hypnotics and sedatives to the physiological limit? 4. Give a proper dietary for the chronic patients in a large public hospital for the insane. 5. Describe methods of artificial feeding. 6. Describe the proper bathing arrangement in a large public hospital for the insane. 7. Describe the trophic disorders which occur in general paralysis of the insane. What measures would you take to prevent their occurrence and how would you treat them when present? 8. Briefly outline what you consider should be the qualifications and routine duties of an Assistant Physician in the Insane Department.

ASSISTANT PHYSICIAN, INSANE DEPARTMENT,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$800 per annum, July 11, 1912.

Experience—Weight 3.

(See page 494.)

Technical Questions—Weight 7.

1. Give your method of procedure in examining an insane patient. 2. How would you treat a case of acute maniacal excitement? 3. Describe the uses of hydrotherapy in the treatment of the insane. 4. Give symptoms, diagnosis and course of locomotor ataxia. 5. Describe methods of forced feeding and indications therefor. 6. In what classes of insane patients should isolation be employed? 7. Give differential diagnosis between cerebral syphilis and paresis. 8. Describe the course of a case of bulbar palsy. 9. Name five drugs useful in treating the violently insane and the doses of each that you would em-

ploy. 10. Briefly outline what you consider should be the routine duties of an Assistant Physician in the Insane Department.

ASSISTANT PHYSICIAN, INSANE DEPARTMENT,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$800 to \$1,000 per annum, December 13, 1912.
(Same as ASSISTANT MALE PHYSICIAN, page 511.)

ASSISTANT PHYSICIAN,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$800 per annum, September 30, 1912.

Experience—Weight 4.
(See page 494.)

Practical Questions—Weight 6.

1. Name five somnifacient drugs, with dose of each. 2. Discuss the physiology of gastric digestion. 3. Discuss and describe the technique of venesection. 4. Name three common valvular diseases of heart, give lesions present in each, with physical signs and symptoms. 5. Give treatment of fractures involving elbow joint. 6. Name three diseases frequently starting with convulsions and differentiate them. 7. Name three different forms of arthritis, with their respective pathologic changes. 8. Give symptoms and treatment of acute diffuse peritonitis. 9. Give doses of the following drugs and a disease in which each is used: Acetphenetidin, sodium salicyl, hyoscine hydrobromide, sodium cacodylate, caffeine and sodium benzoate, camphor, oil of turpentine. 10. Discuss the complications of diabetes mellitus.

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ASSISTANT RESIDENT PHYSICIAN,
 PHILADELPHIA HOSPITAL FOR CONTAGIOUS DISEASES,
 DEPARTMENT PUBLIC HEALTH AND CHARITIES,
 BUREAU OF HEALTH.

\$800 per annum, March 4, 1912.

Experience—Weight 2.

(See page 494.)

Practical Questions—Weight 8.

1. What are the indications for the administration of diphtheria antitoxin? Give technique of injection, manner of determining dosage and necessity for repeating same. 2. Give differential diagnosis between smallpox and chicken-pox. 3. State the duration of the period of incubation of scarlet fever, measles, rubella and diphtheria. 4. Describe the more important symptoms of epidemic cerebro-spinal meningitis. 5. Name the after complications of measles, of scarlet fever and of diphtheria. 6. What precautionary measure should be taken to prevent mixed infection in the wards of the Philadelphia Hospital for Contagious Diseases? 7. Outline a diet for: (a) A child of five years during acute period of diphtheria. (b) A child of same age convalescing from same disease. (c) An infant of one year convalescing from same disease. 8. Outline briefly the duties of an Assistant Resident Physician in the Philadelphia Hospital for Contagious Diseases.

ASSISTANT RESIDENT PHYSICIAN,
 DEPARTMENT PUBLIC HEALTH AND CHARITIES,
 BUREAU OF HEALTH.

\$800 to \$900 per annum, December 13, 1912.

(Same as ASSISTANT MALE PHYSICIAN, page 511.)

ASSISTANT RESIDENT PHYSICIAN,
PHILADELPHIA HOSPITAL FOR CONTAGIOUS DISEASES,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$800 to \$900 per annum, September 30, 1912.

Experience—Weight 3.

(See page 494.)

Practical Questions—Weight 7.

1. What is the most likely source of contagion in scarlet fever, and what measures would you adopt in a scarlet fever ward to prevent contagion? 2. Give differential diagnosis of spasmodic laryngitis, diphtheric laryngitis and enlargement of thymus gland. 3. Discuss briefly the theory of anaphylaxis and its relation to antitoxin therapy. 4. Give incubation periods and dates for appearance of skin lesions in the following diseases: Smallpox, vaccinia, measles, scarlet fever and German measles. 5. What treatment other than the injection of antitoxin is useful in diphtheria? 6. Describe the technique of intubation. 7. Give differential diagnostic points between a pustular syphilide and smallpox in the pustular stage. 8. Name the varieties of the plague and symptoms of each. 9. Differentiate between scarlet fever and dermatitis exfoliativa. 10. A patient is brought to the hospital suffering from sore throat. Examination shows large, almost solid creamy colored patches on each tonsil. Temperature 103 degrees; pulse 105. What is your tentative diagnosis and what conditional evidence would you seek?

ASSISTANT CHIEF RESIDENT PHYSICIAN, DEPARTMENT
PUBLIC HEALTH AND CHARITIES, BUREAU
OF CHARITIES.

\$1,200 per year and house, September 30, 1912.

Experience—Weight 3.

(See page 494.)

Practical Questions—Weight 7.

1. Name five somnifacient drugs, with dose of each. 2. Discuss the physiology of gastric digestion. 3. Discuss and describe the technique of venesection. 4. Name three common valvular diseases of the heart, give lesions present in each, with symptoms and physical signs. 5. Give treatment of fractures involving elbow joint. 6. Name three diseases frequently starting with convulsions and differentiate them. 7. Name three different forms of arthritis, with respective pathologic changes. 8. Give symptoms and treatment of acute diffuse peritonitis. 9. Give doses of the following drugs and a disease in which each is used: Acetphenetidin, sodium salicyl, hyoscine hydrobromide, sodium cacodylate, caffein, and sodium benzoate, camphor, oil of turpentine. 10. Discuss the complications of diabetes mellitus. 11. Give an idea of the organization of the resident staff of a hospital of about 1,000 beds, with special elaboration on the duties of the Assistant Chief Resident Physician.

SCHOOL MEDICAL INSPECTOR,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH, AND BOARD OF
PUBLIC EDUCATION.

\$600 per annum, May 31, 1912.

Experience—Weight 1.

(See page 494.)

Practical Questions—Weight 9.

1. (a) State period of incubation of each of the following diseases: Measles, scarlet fever, smallpox, chicken-pox.
- (b) Describe the characteristic eruptions of above named diseases.
- (c) State day after onset of disease on which the eruption appears.
2. Give differential diagnosis between diphtheria and follicular tonsillitis.
3. Give routine method of making a physical examination of a school-boy and outline form of record of such an examination.
4. Give symptoms and treatment of acute otitis media.
5. Give symptoms and sequelæ of hypertrophied adenoids and faucial tonsils.
6. Mention the characteristic features of tinea tonsurans, of impetigo contagiosa and of scabies.
7. Briefly describe a method of routine for a sanitary inspection of a school building, including inspection of ventilating and heating systems, water supply, drainage, methods of cleaning and disposing of waste, and inspection of toilet inside and outside of school building.
8. Describe the routine duties of a School Medical Inspector and the duties of a School Nurse.

SPECIAL NURSE,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

VISITING NURSE,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$75 per month, February 29, 1912.

Experience—Weight 2.

(See page 503.)

Arithmetic—Weight 1.

(Same questions as for HEAD NURSE, PHILADELPHIA
GENERAL HOSPITAL, see page 504)

Practical Questions—Weight 4.

1. What beneficial results are accomplished by the establishment of a corps of visiting nurses in a large city?
2. What should be your conduct toward persons who refuse you admission to their homes?
3. What action would you take if you found the following cases in your district: (a) Suspected smallpox? (b) Incipient tuberculosis?
4. What diseases are, as a rule, more prevalent among children in the summer time? What prophylactic measures should be taken for their prevention?
5. What are outbreaks of acute infectious diseases more common in winter than in summer?
6. Give a list of baby clothes, etc., you would advise a prospective mother of moderate means to get, if she asked your advice.
7. Why is milk called a perfect food? Mention some common methods used to render milk more easily digested and their action.
8. What are the causes of the following when found in the stools of small children: Hard and soft white curds?
9. What are the indications of adenoids? Of anæmia? Of malnutrition?
10. Give directions for the prevention and early treatment of diarrhea in babies.
11. How is barley

water prepared? Give directions for pasteurizing and for sterilizing milk. State the proper quantity to be given every twenty-four hours to a child of two weeks, of two months, of six months. 12. What care should be given rubber nipples and nursing bottles? Mother's breasts and nipples? 13. Describe the care of the umbilical cord. 14. What symptoms indicate septic infection? 15. What should be done in hemorrhage from the womb during pregnancy?

Report Writing—Weight 2.

Write a report to the Supervising Nurse covering one days' work done by you as a visiting nurse. Assume the time covered by the report, the location in which you worked, the visits you made, and any other details required to make the report comprehensive and definite. Do not sign your name to this report; use your examination number instead.

Spelling—Weight 1.

(Same questions as for HEAD NURSE, PHILADELPHIA GENERAL HOSPITAL, see page 505.)

SUPERVISING NURSE, PHILADELPHIA HOSPITAL FOR CONTAGIOUS DISEASES, DEPARTMENT PUBLIC
HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$100 per month, February 29, 1912.

Experience—Weight 2.

(See page 503.)

Arithmetic—Weight 1.

(Same questions as for HEAD NURSE, PHILADELPHIA GENERAL HOSPITAL, see page 504)

Practical Questions—Weight 4.

1. What relation does a Supervising Nurse bear to the physician in charge of a large institution? 2. What rules would you adopt to enforce discipline and proper administration of a hospital? 3. When and how should the supplies of the various departments in a large institution be distributed? 4. Why is it necessary to keep an accurate and systematic memorandum of supplies? 5. What are some of the common sources of waste in a large public institution? What would you do to prevent them? 6. For what offenses would you be justified in suspending a nurse from duty? 7. What should be done in a contagious ward to prevent the spread of the disease? 8. What are the special points to be considered in the nursing of scarlet fever, and why are they important? 9. What is the usual dose of diphtheria antitoxin for a child? How would you prepare the skin for the injection? 10. How would you give a cold pack to a typhoid patient who had a hemorrhage and could not be moved? 11. What important measures are to be observed in the care of fever patients and state why they are necessary? 12. Mention some diseases in which the diet is an important part of the treatment, and in which errors in dieting may have a serious result. 13. What particulars should be charted in regard to perspiration? What particulars should be noted in regard to urine? 14. Why is formalin specially valuable as a disinfectant? 15. What methods of disinfection would you use for soiled linen, for dishes, for surgical instruments, for hands of nurse, for rubber gloves? 16. How would you prepare the following solutions: Salt, boric acid, bichloride of mercury, carbolic? 17. Describe the methods of sterilizing three different materials used as ligatures. 18. What treatment may be given for nausea or vomiting following ether anesthesia?

Report Writing—Weight 2.

Write a report to the Director of the Department of Public Health and Charities covering the work done under your supervision during one week. Assume the time covered, the number of nurses under your direction and other facts necessary for the report. Do not sign your name to this report; use your examination number instead.

Spelling—Weight 1.

(Same questions as for HEAD NURSE, PHILADELPHIA GENERAL HOSPITAL, see page 505.)

SUPERVISOR OF SCHOOL MEDICAL INSPECTORS,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$1,500 per annum, February 23, 1912.

Experience—Weight 2.

1. Give examination number. 2. Give your name in full. 3. Give your present address. 4. Where were you born? 5. What is your age? 6. How long have you resided in Philadelphia? 7. Have you a license or certificate from the State Board of Medical Examiners authorizing you to practice medicine in the State of Pennsylvania? 8. Give date of graduation and name of college or university from which you have graduated. 9. How long have you been in the active practice of medicine? 10. What is your present occupation? 11. Have you any other occupation or profession? If so, state same. 12. Have you served as interne in any hospital? If so, state where and length of service. 13. Have you had experience in a dispensary? If so, state where and how long. 14. Have you ever been engaged in any capacity which in your opinion particularly fits you for the position of School Medical Inspector? 15. Are you in good physical condition and capable of undertaking and performing the active

and exacting routine duties of School Medical Inspector?
16. Give three names and addresses for reference.

Practical Questions—Weight 8.

1. Give objective and subjective symptoms of errors of refraction and describe simple methods of testing for such errors. 2. Give the differential diagnosis between measles and scarlet fever, including period of incubation, invasion and eruption. 3. Give reasons that would determine you to excuse a child from routine gymnastic exercises, also reasons for forbidding a child entering into severe athletic competition. 4. Name the different causes of retardation due to physical defects found in school children and name the character of cases which should be referred to special schools. 5. Briefly outline a routine for a sanitary inspection of a school building. 6. Draw up your suggestion for a blank form of weekly report of a Supervising Medical School Inspector to the Chief Medical School Inspector. 7. What do you consider the routine duties and responsibilities of a Supervising Medical School Inspector? 8. What preventative and educational measures should be observed by both inspector and teacher to prevent school children from a possible contact infection? 9. An infectious disease has broken out in a school; what routine would you follow to prevent the further spread of the infection? 10. Describe briefly what you consider should be the qualifications and duties of a school nurse, and name the necessary equipment which should be supplied.

VETERINARY SURGEON,
DEPARTMENT OF PUBLIC SAFETY, BUREAU OF FIRE.
\$2,000 per annum, July 31, 1912.

Experience—Weight 3.

1. Give the names and addresses of two reputable citizens who will vouch for the truth of your answers on this

paper. 2. What is your age? 3. What school of veterinary medicine and surgery did you attend? 4. When and where were you licensed to practice? 5. What has been the extent of your hospital experience? 6. What has been your practical experience as a veterinarian? Has it been continuous? If not, why not? 7. Have you specialized in any branch of veterinary medicine or surgery? If so, to what extent?

Practical Questions—Weight 7.

1. (a) Describe the symptoms of influenza. (b) Outline treatment for a horse affected with this disease. (c) State what precautions, if any, are necessary to prevent the spread of the disease. 2. By what signs or conditions may the presence of periodic ophthalmia be suspected in the intervals between active attacks of this disease? 3. In an outbreak of rhinoadenitis in a City Department stable, how would you deal with the same and what measures would you adopt for its control and elimination? 4. What is the significance of lampas? (a) What is the significance of a protruded jaw in the horse? (b) What importance would you attach in an examination to portions of half masticated food in the mouth? 5. How would you make a differential diagnosis between spasmodic and flatulent colic? Give outlines of the general treatment of such cases. 6. What would your procedure be in case a horse affected with glanders was discovered by you in the stable of a fire company? 7. How would you detect mange in the horse? (a) How is it spread among horses and from stable to stable? (b) How would you eradicate it from a stable and what methods would you adopt to check its spread? 8. How would you diagnose navicular disease? (a) What would lead you to suspect it in an examination for soundness? 9. What would be your objections, if any, to a horse of toe wide conformation? 10. What

obscure unsoundness does the ordinary examination for soundness not afford us opportunity for properly determining? 11. What obscure unsoundness of the hock and foot and what methods of diagnosis would aid you in determining the same? 12. What conformation of hocks would be objectionable for saddle horses? What type of feed are to be rejected in horses for the fire service? 13. Give the width, length and description of a properly built stall for a 1,200-pound horse. 14. Give the general dimensions for a stable for 20 horses of an average weight, each of 1,100 pounds. (a) Give the best methods for lighting, ventilating and drainage. 15. How would you instruct subordinates as to cleaning a horse? (a) Cleaning of stall? (b) Give the daily ration of a 1,200-pound horse. (c) Best methods of watering and the average amount of water consumed by a 1,200-pound horse in 24 hours.

VETERINARY SURGEON,
DEPARTMENT OF PUBLIC SAFETY, BUREAU OF FIRE.
\$2,000 per annum, September 10, 1912.

Experience—Weight 3.

(See page 524.)

Practical Questions—Weight 7.

1. Describe the receptaculum chyli and the thoracic duct.
2. Describe the ligamentum nuchae of the (a) horse, (b) ox, (c) pig, (d) dog.
3. Describe the various ways in which the tubercle bacillus may (a) enter, (b) leave the body of an animal.
4. Describe the etiology, symptoms and differential diagnosis of anthrax.
5. What are the symptoms and treatment of strangles? How should a case of strangles in a large stable be handled?
6. Describe the physiologic action of belladonna, and state dose of the fluid extract of the (a) horse, (b) cow, (c) dog.
7. Describe the

secretion, characteristics and functions of saliva. 8. What is the cerebellum? State its functions. 9. Describe hemorrhagic infarcts, and state how they occur. 10. Describe in detail the healing of a wound by granulation. 11. What are the causes and treatment of interfering in horses? 12. What is a quittor? Give its symptoms and treatment. 13. What measure would you recommend to suppress (a) foot and mouth disease; (b) tuberculosis in cattle? 14. Give the names and location of six important lymphatic glands or groups of glands. State the function of the lymphatic system. Where does the lymphatic system empty into the blood circulation? 15. Name the principal constituents of the blood.

MISCELLANEOUS SERVICE

Experience Sheet for the Miscellaneous Service.

1. What is your age? 2. (a) In what grade were you when you left grammar school? (b) What high school did you attend? How long? What course? (c) What technical training have you had as an apprentice, or in business school, or in college, or in technical school? 3. In general, what is your occupation? How long have you followed it? 4. When, where, for whom and how long have you worked at this occupation, and what wages or salaries have you received in each case? 5. From what positions have you been discharged for cause, and what were the causes? 6. State exactly and in detail the kind of work you were doing in each of the leading positions you have filled in the past five years. 7. Give the particulars about any special work you have done in addition to the above, which tends to qualify you for the position you are now seeking.

WOMAN ATTENDANT IN CHARGE OF DENTAL CLINIC,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$800 per annum, March 18, 1912, with supplementary examination on May 11, 1912.

Experience—Weight .5.

(See page 527.)

Spelling—Weight 1.5.

1, Anthracite; 2, balance; 3, budget; 4, censure; 5, curator; 6, duplicate; 7, eligible; 8, embarrass; 9, epidemic; 10, explicit; 11, fortunate; 12, gasoline; 13, gymnasium; 14, humiliate; 15, indelible; 16, library; 17, militia; 18, nominal; 19, pecuniary; 20, spontaneous.

Arithmetic—Weight 1.5.

1. Add 93878968546, 58737895482, 47563754975, 65989684896, 89436854378, 74565429739. 2. Add: $767\frac{1}{2}$, $6468\frac{3}{4}$, $72\frac{3}{8}$ and $876\frac{5}{16}$; and from the sum subtract $7267\frac{1}{8}$. 3. Multiply 78659 by $67\frac{3}{8}$. 4. Divide 29708108 by 798. 5. 645 is 15 per cent. of what number? 6. Find the simple interest of \$635.65 for 2 years, 3 months, 15 days at 6 per cent. 7. Divide 7.95135 by 3.05. 8. How much do I pay for 150,000 shipping tags, the listed price of which is $33\frac{1}{3}$ cents a thousand, if a discount of 25 per cent. and 5 per cent. are allowed? 9. If $\frac{3}{8}$ of a number is 99, what is $\frac{5}{6}$ of the same number? 10. A man receives \$2,400 a year. He spends $16\frac{2}{3}$ per cent. of it for rent, $8\frac{1}{3}$ per cent. for clothing $33\frac{1}{3}$ per cent. for household expenses. How much does he save?

Letter Writing—Weight 1.

Write a letter of not less than 150 words to the Civil Service Commission, Philadelphia, on the subject: "Inventors and their inventions during the last 25 years." Mechanical arrangement, adherence to the subject and ex-

pression will be considered in marking this subject. Do not sign your name to this letter; use your examination number instead.

Penmanship—Weight 2.

This subject will be marked on the writing in the letter.

Practical Questions—Weight 2.

1. Give at least two methods for sterilizing instruments with details of each method. 2. What means are used to resuscitate a patient who has fainted? 3. Give treatment for hemorrhage due to extraction of teeth.

Plain Copy—Weight 1.5.

Make an accurate copy of the following:

Since February 15th the filters have been operated at rates approximating 6,000,000 gallons per day per acre, the average rate since the above date being 4.2 million gallons per acre per day.

Two methods of cleaning were employed, *i. e.*, the regular or scraping and ejecting method and the use of Nichols' Separators.

The total number of runs or cleanings was 840 during the year, an average of about 13 cleanings per filter, having an average length of 26.2 days.

The Nichols method was used for 695 cleanings and the average cost was as follows:

Number of cleanings by Nichol's method.....	695
Average length of runs, days.....	27.3
Average million gallons, filtered, per run.....	91.7
Average m. g. filtered per acre per run.....	119.8
Average cost of water to wash per m. g. filtered...	\$0.01
Average cost of labor to scrape and wash per m. g. filtered	.40
Cost of water wasted	.01
Total cost per m. g. filtered.....	.42
Average number of gallons wash water per m. g. filtered	1,000
Average depth scraped per run, inches.....	0.71

THIRD ASSISTANT BACTERIOLOGIST (MEN AND WOMEN),
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$900 per annum and over, July 29, 1912.

Experience—Weight 3.

(See page 527.)

Practical Questions—Weight 7.

1. Distinguish between a germicide, an antiseptic, a disinfectant and a deodorizer. 2. Describe the plate method of isolating bacteria. 3. What diseases are transmitted by water? Describe a method by which you can determine the number of bacteria in 1 cc. of water. 4. Describe the hanging drop. What are some of its advantages? 5. Distinguish between sterilization and pasteurization. 6. How would you proceed to stain bacteria? 7. How would you make a bacteriological examination of milk? 8. Name five culture media and describe how you would prepare a pure culture with one of these. 9. Give the details of Widal's test for typhoid fever. 10. Discuss the bacteriology of Vincent's angina.

FOURTH ASSISTANT BACTERIOLOGIST (MEN AND WOMEN),
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$900 per annum and over, July 29, 1912.

Experience—Weight 3.

(See page 527.)

Practical Questions—Weight 7.

1. Distinguish between a germicide, an antiseptic, a disinfectant and a deodorizer. 2. Describe the plate method of isolating bacteria. 3. What diseases are transmitted by water? Describe a method by which you can determine the number of bacteria in 1 cc. of water. 4.

Describe the hanging drop. What are some of its advantages? 5. Distinguish between sterilization and pasteurization. 6. How would you proceed to stain bacteria? 7. How would you make a bacteriological examination of milk? 8. Name five culture media and describe how you would prepare a pure culture with one of these.

ASSISTANT CHEMIST,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.
\$600—\$1,000 per annum, October 8, 1912.

Experience—Weight 4.

(See page 527.)

Practical Questions—Weight 6.

1. In collecting a sample of water for analysis (chemical and bacteriological), what precautions should be taken, and what observations made? 2. If you suspect a well to be polluted by a cesspool, how can you verify your suspicions by a simple test? 3. What method would you pursue in determining total solids and organic matter? What limits would you fix as the maximum for total solids? 4. Explain fully the chemistry of the method which you would follow in determining chlorides. How would you calculate your results? 5. How would you determine nitrites quantitatively? Tell how all reagents used should be prepared. 6. Describe the determination of free ammonia in a water. 7. Given a sample of a chalybeate water, describe the analysis of the mineral residue. 8. Describe the construction of a filter plant, telling what it should be able to do when in good working order, and mentioning what tests should be made to determine its efficiency. 9. What conditions are essential to the success of an intermittent filter for the purification of sewage? 10. Write a full account of the conclusions to be drawn concerning the history and potability of a water

from a purely chemical analysis, emphasizing chlorides, free and albumenoid ammonia, nitrites and nitrates. 11. Describe a method for the quantitative determination of bacteria. 12. How would you distinguish between *bacillus coli communis* and *bacillus typhosus*?

DIRECTOR, PUBLIC AQUARIUM, OFFICE OF THE MAYOR.
\$4,000 per annum, March 4, 1912.

Experience—Weight 2.

(See page 527, and the following supplementary questions.)

1. What has been your experience in fish culture, hatchery or aquarium work? 2. What has been the extent of your study of ichthyology as a science? 3. Name the aquariums or fish culture stations that you have visited and examined, and tell what particularly advantageous features in each appealed to you. 4. Have you ever been in charge of a similar institution? If so, where and how long?

Aquarium Work—Weight 4.

1. Describe in detail the necessary requirements for an up-to-date aquarium plant. 2. Describe the construction of a suitable aquarium tank, naming the design, size, kind and dimensions of material used in its construction. 3. State the necessary thickness of the glass for an aquarium $3\frac{1}{2}$ feet deep by 6 to 7 feet in length, and name the most satisfactory cement for installing the glass. Describe in a general way the requirements for a closed circulating system, in order that the same water may be used indefinitely. 5. Describe in detail a suitable filter for a closed circulating system capable of filtering the necessary amount of water required for operating twenty-five aquarium tanks holding five hundred gallons of water each. 6. Describe a suitable apparatus for generating

and introducing air into each aquarium tank. 7. Describe the necessary apparatus for use in connection with controlling water temperatures in the aquarium during summer and winter. 8. Name six of the most essential features to be considered in the construction and maintenance of an up-to-date aquarium. 9. Name the necessary amount of water per hour that should be circulated through an aquaria holding five hundred gallons of water when fully stocked with fish. 10. State the maximum number of adult fishes (marine), size 6 to 8 inches in length, that can be successfully kept in one aquarium holding 500 gallons of water. 11. Describe a method for introducing the water supply into each aquarium tank, and for the control of its overflow. 12. Describe the cleaning of aquariums when fully stocked with fish, and the necessary appliances for accomplishing the work. 13. At what temperature should salt water be maintained for the successful keeping of tropical fishes? 14. At what temperature can the salmonidae be successfully kept in summer? 15. Name the best remedy for diseased fishes in aquarium, and how the remedy should be applied. 16. Name the best material for interior decoration of aquarium tanks, and how it should be installed. 17. Name the principal foods best adapted for feeding marine and fresh water fishes when kept in aquarium.

Technical Questions—Weight 4.

1. Name the different "classes" of fishes and fish-like vertebrates occurring in the fresh waters of Pennsylvania and marine proximity. (a) Give the principal characteristics of each. 2. Name the orders of the most comprehensive class, that occur in the fresh waters of Pennsylvania. (a) Give the principal characteristics of each order. 3. What Pennsylvania fishes would you select for an educational exhibition typical of the different orders

and of phylogenetic significance? 4. Name one species comprised in each of the principal families of fresh-water fishes of Pennsylvania. 5. Name one species of fish peculiar to the Atlantic drainage. Name one species of fish peculiar to the Ohio drainage. Name one species of fish peculiar to the Lake Erie drainage. Name one species of fish common to the three drainages. 6. Name ten species of marine fishes occurring in Delaware Bay and neighboring coast of New Jersey and Delaware. 7. Name the species ascending the Delaware to breed. (a) To what orders do these anadromous fishes belong? 8. What are the principal two foreign fishes belonging to the family *Cyprinidae* that have been introduced into Pennsylvania waters? (a) Name one character that distinguishes one from the other. (b) How are both distinguished from all other Pennsylvania *Cyprinidae* by one common characteristic? 9. What fresh-water fishes of Pennsylvania would you select for exhibition on account of peculiar breeding habits? (a) Describe the habits of each. (b) Where would you look for each? 10. What curious marine fishes are procurable in Delaware bay or vicinity? (a) Name one of peculiar breeding habits. (b) Another of adaptive coloration. (c) Another of peculiar structure. (d) Where and when would you look for each of the three named? 11. What fishes would you exhibit as the most commercially important of Pennsylvania? (a) Marine species. (b) Fresh water. (c) Anadromous. (d) Where and when would you look for them? 12. Name the principal native game fishes of Pennsylvania and the families to which they belong.

ASSISTANT DISINFECTOR, DEPARTMENT PUBLIC HEALTH
AND CHARITIES, BUREAU OF HEALTH.

\$1,000 per annum, October 8, 1912.

Experience—Weight 4.

. (See page 527.)

Practical Questions—Weight 6.

1. What is the quickest route to drive from the north-east corner of City Hall to Eighth and South streets? To Nineteenth and Diamond streets? To Moyamensing Prison? To Sixty-third street and Lansdowne avenue? 2. How many cubic feet in a room 12 feet by 20 feet by 9 feet? 3. Tell what are two of the principal disinfectants used by the City of Philadelphia, and describe how they are used. 4. Describe in detail, step by step, how a bedroom, which had been occupied by a case of diphtheria, should be disinfected. Point out what articles should be destroyed, which sent to the Disinfection Station, and how the others should be treated. The dimensions of the room are 15 feet by 18 feet by 8 feet. 5. What personal precautions should a disinfectant take in handling the usual disinfectants? 6. If the occupant of a house in which you were ordered to disinfect a room, after scarlet fever, objected to permitting you to do it, how would you persuade the person to let you do your work? 7. How should drains be disinfected?

ENGINEER IN CHARGE OF FILTER RECORDS,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.

\$1,500 per annum, September 7, 1912.

Experience—Weight 3.

(See page 527.)

Arithmetic—Weight 2.

1. Original cost of plant, \$600,000; attendants per year, \$7,850; labor per year, \$2,500; materials per year,

\$6,224; overhead charges per year, \$1,282; original cost covered by 4 per cent. bonds; depreciation, 3 per cent. If the daily capacity of the plant is 12,000,000 gallons, what is the cost of filtration per million gallons? 2. What is the pressure per square inch on the bottom of a cylindrical tank of 6-foot diameter, in which the water is 10 feet deep and the surface of the water is under atmospheric pressure only? 3. How many gallons will be carried per day in a circular conduit 6 feet in diameter, in which the water is $1\frac{1}{2}$ feet deep and has an averaged velocity of 18 feet per minute? 4. The annual cost of operating the pre-filter beds in a certain plant is \$13,000; final filter beds, \$19,000; sedimentation basin, \$4,500. If the abandonment of the sedimentation basin causes an increase of 12 per cent. in the cost of operating the pre-filters, and an increase of 9 per cent. in operating the final filters, is the total cost of filtration increased or decreased, and how much? (a) What is the per cent. decrease or increase in total cost of operation?

Practical Questions—Weight 5.

1. Tell briefly the following points about each of the filter stations of the City of Philadelphia: (a) location; (b) capacity; (c) source of supply; (d) district served; (e) system of filtration used. 2. Describe in detail two different types of preliminary or rapid filter beds, and compare their efficiency. Illustrate the construction of each by a sketch. 3. How often and in what manner should tests of the efficiency of a filter plant be made? What tabulated records of these should be kept? Give a sample table. 4. What three methods of cleaning filters have been used in Philadelphia? Describe in detail two of them. Point out their relative advantages. 5. What are the chief chemical and bacteriological impurities in raw water that may be removed by filtration? Describe

in detail the tests for three of these? 6. How do you account for the bacterial efficiency of a sand filter, and when is it greatest? What quantity of bacteria in the effluent would indicate that a filter was inefficient? 7. In a detailed report of the annual cost of a filter plant what data should be included? Outline a sample annual report. 8. Write a letter of about 300 words to the Chief of the Bureau of Water on the question of an extension of the present filtration system, showing whether or not it is a necessity; proposed location and character of the plant; use as one argument the effect of filtered water on the death rate of the City.

ENTOMOLOGIST,

DEPARTMENT PUBLIC WORKS, DIRECTOR'S OFFICE.

\$1,500 per annum, September 28, 1912.

Experience—Weight 3.

(See page 527.)

City Information—Weight 1.

1. Give the street boundaries of the sections of Philadelphia most troubled with mosquitoes. 2. Locate, by streets, the six Philadelphia most important markets. 3. Locate, by streets, four large slaughtering houses in Philadelphia. 4. Exclusive of the Schuylkill and Delaware rivers and Bureau of Water reservoirs, name and locate five large bodies of water lying wholly or in part within the City's limits. 5. Locate, by streets, eight Philadelphia parks east of Schuylkill river.

Practical Questions—Weight 5.

1. Give briefly the life history of a mosquito. 2. Describe the conditions favorable to the breeding of: (a) culex; (b) anopheles; (c) stegnomia. 3. What insects carry diseases to men? What diseases? How? 4. What

mosquitoes are found in Philadelphia? 5. Give the life history of a house fly. 6. How can the breeding of a house fly be checked? 7. Discuss the use of oils as a remedy against mosquitoes, naming oils used, places where the experiment has been tried, the success of the plan. 8. Discuss the introduction of natural enemies into breeding pools, mentioning instances where this has been tried and the degrees of success of the plan. 9. Discuss two methods of draining breeding pools and what factors would determine the method you would use.

Report Writing—Weight 1.

Write a letter of about 300 words to the Chief of the Bureau of Health on the subject: "How can the people of Philadelphia be enlisted in an effective campaign against house flies and mosquitoes."

CHIEF EXAMINER, CIVIL SERVICE COMMISSION.

\$2,400 per annum, May 3, 1912.

Education, Training and Experience—Weight 4.

1. Submit a complete statement of your general education and training. Give the names of the institutions at which you have studied, the length of attendance (with dates) in each case, and the degree (if any) conferred. 2. Submit, also, a statement of any special training you have had, and a list of the books you have read along lines that would tend to fit you for this position. 3. Submit a complete statement of your business or professional training and experience, giving the names and addresses of employers, with dates, the exact nature of your duties with each, salaries received, and reasons for making any change.

Theses—Weight 3.

Write a theses of not to exceed 1,000 words each on two of the following three topics. This exercise is intended to test the competitor's comprehension of and resourcefulness and originality in solving problems relating to the practical application of the principles of competitive examinations to positions in the public service, as well as his ability, logically and clearly, to present his views.

1. Outline a scheme of applying competitive examinations to positions in the mechanical trades (such as blacksmith, bricklayer and carpenter), stating what information you would consider necessary in order to determine the relative value of competitors, how you would obtain such information, and by what method you would rate it, and give the reasons for your views. 2. Assuming that the positions of tenement-house inspector, laborer, patrolman and hospital superintendent are in the competitive class of the civil service of the city, describe fully the examinations you would recommend for any two of the four positions. 3. Discuss the feasibility of competitively testing administrative or executive ability.

Jurat.—The following oath must be taken before a notary public or other officer authorized to administer oaths for general purposes, and the officer's signature must be authenticated by official seal. If the oath be taken before a justice of the peace, or other officer who has no official seal, his official character must be certified by the clerk of the court, secretary of state, or other proper officer, under official seal: I, the undersigned, do solemnly swear (or affirm) that the accompanying statements made by me under the first subject are true, to the best of my knowledge and belief, and that in the preparation of the accompanying theses, under the second subject of the examination, the composition is entirely my own, and that

I have given full credit by quotation marks or references to authorities for any quoted matter.

(Signature of competitor.)

Subscribed and sworn to before me by the above-named competitor this day of, 1912, at county of and State of

(Signature of officer.)

(Official title.)

(Official seal.)

(The official seal must not be omitted.)

Judgment, Tact and Personal Fitness (Oral)—Weight 3.

ASSISTANT EXAMINER, CIVIL SERVICE COMMISSION.

\$1,800 per annum, May 3, 1912.

The examination questions for Assistant Examiner were the same as for CHIEF EXAMINER (see above).

EXTRA EXAMINER, CIVIL SERVICE COMMISSION.

\$1,800 per annum, December 7, 1912.

Experience—Weight 4.

1. Submit a complete statement of your general education and training, giving the names of the institutions at which you have studied, length of attendance, with dates in each case, and the degrees, if any, conferred.
2. Submit a statement of any special training you have had and a list of the books you have read along the lines that would tend to fit you for this position.
3. Submit a complete statement of your business or professional experience, giving the names and addresses of employers, with dates, the exact nature of your duties with each, salaries received, and reasons for making any change.

Theses—Weight 3.

Write theses of not less than 1,000 words or more than 1,500 words each on two of the following subjects. This exercise is intended to test the competitor's comprehension of and resourcefulness and originality in solving the problems relating to the practical application of the principles of competitive examinations to positions in the public service, as well as his ability, logically and clearly, to present his views. 1. Discuss the use and value of fixed standards in marking papers. 2. How much weight should be given "experience" in various examinations, and how should it be marked? 3. Discuss improvements which to you seem feasible in the application of competitive examinations to positions in the public service. 4. To what extent are tests in the actual work to be performed practicable in the application of competitive examinations to positions in the public service?

Jurat.—The following oath must be taken before a notary public or other officer authorized to administer oaths for general purposes and the officer's signature must be authenticated by official seal. If the oath be taken before a justice of the peace, or other officer who has no official seal, his official character must be certified by the clerk of the court, secretary of state, or other proper official, under official seal: I, the undersigned, do solemnly swear (or affirm) that the accompanying statement made by me under the first subject is true, to the best of my knowledge and belief, and that in the preparation of the accompanying theses under the second subject, the composition is entirely my own, and that I have given full credit by quotation marks or references to authorities for any quoted matter.

(Signature of competitor.)

Subscribed and sworn to before me by the above-named

competitor, this day of, 1912,
 at County of
 and State of

(Signature of officer.)

(Official title.)

(Official seal.)

(The official seal must not be omitted.)

Judgment, Tact and Personal Fitness (Oral)—Weight 3.

GUARD, ANY DEPARTMENT.

\$600—\$900 per annum, February 28, 1912.

The examination questions for Guard were the same as
 for MESSENGER. (see page 555.)

GUARD AND SUB-GUARD, DEPARTMENT PUBLIC SAFETY, BUREAU OF CORRECTION.

\$900 per annum, July 6, 1912.

Experience—Weight 4.

(See page 527.)

Arithmetic—Weight 1.

1. Add: 37,854, 79,642, 89,732, 96,784, 6,923, 37,892.
2. Subtract 734,526 from 876,403. 3. Multiply 32,736
 by 45. 4. Divide 3,785 by 5.

City Information—Weight 1.

1. In what direction from City Hall is Logan? Rox-
 borough? Cramp's Shipyard? Overbrook? 2. Give the
 shortest route from Philadelphia Hospital for the Insane
 in West Philadelphia to the House of Correction. 3.
 Where does Ridge avenue cross Vine street? Spring
 Garden street? Girard avenue? 4. Name five main
 entrances to Fairmount park. 5. Locate Pennsylvania
 Hospital; Juvenile Court; City Morgue; House of Cor-
 rection; St. Agnes Hospital.

Memory Exercise—Weight 2.

Reproduce the following (this was read aloud to the applicants twice):

July 9, 1912. Look for Louis White, escaped from House of Correction to-day, 41 years old, 5 feet 10½ inches high, brown hair, gray eyes, wart on left forehead. close shaven, broken nail on left thumb, gray striped suit, three-button suit.

Writing Description for Identification—Weight 2.

Write a description of one of the policemen or attendants in this room, so that any person who reads your description can identify the man, wherever he may be, and no matter what suit he has on. Do not sign your name to this description; use your examination number instead.

HOUSEKEEPER,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$600 per annum, October 17, 1912.

Experience—Weight 5.

1. Give the names and addresses of two reputable citizens who will vouch for the truth of your answers on this paper. 2. What is your age? 3. What was the highest reader you studied in school? 4. How far did you go in arithmetic? 5. What is your trade or chief occupation? 6. How long did you follow this occupation? 7. What are you doing now? Who is your employer? How long have you worked? What wages do you receive? 8. Name three of your principal employers. Give their addresses. 9. Tell what class of work you did for the above and how long you were in their employ. 10. Tell what wages you received from each, and why you left.

Personal Fitness—Weight 3.

What is your age? Married or single? 2. To what extent do you use liquor or cigarettes? 3. Have you ever been arrested? Sanitary condition of person. 5. Physical fitness.

Practical Questions—Weight 2.

1. What precautions would you take to prevent the rooms under your charge from becoming infested with mice, roaches and vermin? 2. What means would you use to keep yourself acquainted with the condition and amount of linen on hand? 3. Tell, in a few words, how you would control and supervise your subordinates? 4. In a large institution, is it necessary to take any special precautions about the use and cleaning of towels? Why? What would you do? 5. How would you clean linoleum, carpet, oilcloth, rugs, hardwood floors.

MUSICAL INSTRUCTOR, INSANE DEPARTMENT,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$420 per annum, February 29, 1912.

Experience—Weight 2.5.

(See page 527).

Technical Knowledge—Weight 7.5.

1. TUNE.—1. Using the letters a, b, c, d, e, f, g, and the words sharp or flat, as may be required, indicate in diatonic order the names of the tones of the scale of E major. 2. Draw a short free-hand staff with the G clef in position, without key signature, but using such accidentals as may be necessary; indicate in notes the diatonic scale of E-flat major. 3. Draw a short free-hand staff and with the G clef and signature for the key of A major in position, using such accidentals as may be necessary; in-

licate, with three notes, the tones five, sharp four, four, in the order named. 4. Draw a short free-hand staff and with the G clef and signature for the key of A-flat major in position, using such accidentals as may be necessary, indicate, with three notes, the tones six, flat seven, seven, in the order named. TIME.—5. What is the differentiating characteristic of three-part measure as distinguished from two-part measure? 6: Define syncopation. EXPRESSION.—7. F is the abbreviation of what? 8. Pianissimo means what? 9. What word is technically the equivalent of $\text{—} >$? MOVEMENT.—10. Define: (a) largo; (b) andante; (c) allegro.

INVESTIGATOR, CIVIL SERVICE COMMISSION.

\$1,200 per annum, June 6, 1912.

SPECIAL EVIDENCE AGENT, LAW DEPARTMENT.

\$1,500 per annum, June 6, 1912.

Arithmetic—Weight .5.

1. Add: 435,618, 22,432, 133,698, 243,563, 38,240, 682. 2. Subtract 1,426,526 from 3,354,525. 3. Divide 33,031 by 24,650. 4. Find $3\frac{1}{4}$ per cent. of 68,072. 5. Calculate the simple interest on 1,056 at 6 per cent. for 2 years and 3 months. 6. Add: $\frac{3}{5}$, $\frac{2}{3}$ and $\frac{1}{4}$.

Penmanship—Weight 1.

Penmanship will be marked on the writing of the Plain Copy.

Personal Fitness (Oral)—Weight 1.5.

Plain Copy—Weight 1.

Make an exact copy of the following:

"The Bureau of Compulsory Education has, during the last year, widened the scope of its activities far beyond the mere enforcement of attendance of children of school

age. Through it the public schools are taking their proper place as a constructive social agency. When cases of hardship are found, the bureau endeavors, by co-operation with other organizations, to surround the child with conditions which make attendance possible, and where institutional care is needed, it assists in finding the best."

Practical Questions—Weight 5.

1. A claim is made against the City of Philadelphia for damages for injuries alleged to have been received by a woman from a fall at the corner of Twentieth and Master streets on a certain date. What steps would you take to obtain full information for a report to the City Solicitor, as to the cause of the accident and the extent of the injuries received? 2. State the location of each of the following places: Philadelphia Central High School, Episcopal Hospital, Philadelphia Hospital, County Prison, Memorial Hall, Philadelphia Bourse, Baldwin's Locomotive Works, Eastern Penitentiary, Cramp's Shipyard, Tacony. 3. A claimant against the City for damages for personal injuries claims to have lost six months employment. An investigation shows that before and after the accident he was employed at a certain factory, but the superintendent refuses all information as to the time lost by the employee. How would you go about getting the desired information? 4. Write a report of about 200 words to the Civil Service Commission on the recent strike of the Detroit Baseball team. 5. Describe briefly the present form of government of the City of Philadelphia. 6. In an investigation of a claim against the City, a witness to the occurrence mentions that there is another witness whose name he does not know, who is employed at Cramp's Shipyard. How would you go about locating the witness wanted? 7. Locate the following wards of the City of Philadelphia: First, Fifth,

Eighth, Twenty-second, Twenty-third and Fortieth. 8. In the construction of a public structure under a contract with a general contractor who employs sub-contractors, and in which the contract price is determined by the amount of labor done and material furnished, a charge is made that the City Treasury is being mulcted by charging for a greater amount of sand that is actually furnished and by furnishing a cheaper and inferior grade than that specified. What course would you pursue in investigating the case and fixing the responsibility if you found the charges to be well founded? 9. What are the respective authority and duties of a sergeant, lieutenant, and captain of police of the City of Philadelphia?

Spelling—Weight 1.

1, assumption; 2, calendar; 3, separate; 4, dignitary; 5, legitimate; 6, manageable; 7, rational; 9, technical; 10, knowledge; 11, wrinkle; 12, search; 13, bicycle; 14, celebration; 15, desperation; 16, dispensary; 17, luxurious; 18, multifarious; 19, savage; 30, seizure.

JANITOR, ANY DEPARTMENT.

\$600—\$900 per annum, February 28, 1912.

The examination questions were the same as those used in the examination for MESSENGER. (See page 555.)

JANITOR, ANY DEPARTMENT.

\$900 and over per annum, July 6, 1912.

The questions for this examination were the same as those used in the examination for SPECIAL OFFICER. (See page 568.)

COURT JANITOR, ANY DEPARTMENT.

\$600—\$900 per annum, February 28, 1912.

The questions for this examination were the same as those used in the examination for MESSENGER. (See page 555.)

COURT JANITOR, ANY DEPARTMENT.

\$900 and over per annum, July 6, 1912.

The questions for this examination were the same as those used in the examination for SPECIAL OFFICER. (See page 568.)

JANITRESS, CLEANER (WOMEN), ANY DEPARTMENT.

\$300—\$420 per annum and \$2 per day, March 12, 1912.

Experience—Weight 2.

1. What is your age. 2. For what position do you apply? 3. What is your trade? 4. How long have you worked at your trade? 5. If you have no trade, what have you been doing? 6. How long have you been engaged in such work? 7. Have you ever been employed by the City? 8. If so, in what position and how long? 9. Give the names and addresses of the persons for whom you have worked for the last three years and longer.

*Physical Fitness—Weight 2.**Practical Questions—Weight 6.*

1. How would you clean linoleum floor coverings? 2. How should wooden floors be cleaned? 3. What is the best way to clean windows? 4. How would you remove an ink stain from a carpet? 5. Give the proper method of dusting.

LABORATORY WORKER, ANY DEPARTMENT.

\$360—\$600 per annum, October 31, 1912.

Experience (Oral)—Weight 5.

1. Give the names and addresses of two reputable citizens who will vouch for the truth of your answers on this paper. 2. What is your age? 3. What was the highest reader you studied in school? 4. How far did you go in arithmetic? 5. What is your trade or chief occupation? 6. How long did you follow this occupation? 7. What are you doing now? Who is your employer? How long have you worked for him? What wages do you receive? 8. Name three of your principal employers. Give their addresses. 9. Tell what class of work you did for the above and how long you were in their employ. 10. Tell what wages you received for each and why you left.

Practical Questions (Oral)—Weight 2.

1. What is meant by disinfectant? Name two in common use. 2. Why should a laboratory and all apparatus in it be kept clean? 3. Tell how you would clean a test tube. 4. What is a Bunsen Burner and how may it be regulated? 5. What is a water bath, and what is its use? 6. What chemicals should not be thrown into ordinary drain or waste pipes? 7. Describe in detail the process of filtering a solution.

Personal Fitness (Oral)—Weight 3.

1. What is your age? Married? Children? 2. To what extent do you use liquor or cigarettes? 3. Have you ever been arrested? 4. Sanitary condition of person. 5. Physical fitness.

LANDSCAPE EXPERT,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.

\$200 per month, September 28, 1912.

Experience—Weight 3.

1. What is your age? 2. Give a statement showing the schools you have attended, with dates of attendance, graduation and courses of studies pursued. 3. Give a statement setting forth your principal employments, giving names of employers and dates of service, character of duties performed and salaries received. 4. If you have been in business for yourself, state the nature of the business, location, character of the work, and approximate annual income. 5. Give a statement setting forth any special pieces of landscape work that you have done, giving locations, dates and character of work performed.

Practical Questions—Weight 6.

1. This suppositious pumping station (see drawing), is of monumental character, with a lofty stack rising from the rear wing. The coal is received and ashes removed by means of the railroad siding on a raised trestle, as shown. The property is supposed to be on the edge of a large and rapidly growing city in need of more parks. Make in this print a free-hand pencil layout, showing roads, walks, grading, drainage, planting, shelters, and any other features you advise, so arranged as to transform the property into a beautiful neighborhood park. Colored pencils may be obtained at the desk, if desired. The street grades are uniform between the grade figures shown at the corners of the property. Changes of grading should be shown by dotted contours. 2. Prepare a planting list indicated by key numbers on the plan where the plants are to be placed. Note the soil in the western half of the property is a heavy clay, and that on the eastern end a sandy loam, with micaceous outcropping ledges.

Curb E1
140

West Street

Curb
130

3. Name and briefly describe: 8 indigenous species of *Viburnum*; 5 indigenous species of *Cornus*; 10 indigenous species of *Quercus*. 4. Give brief accounts of the following men and their influence on landscape design: Andre Le Notre, Humphry Repton, A. J. Downing, F. L. Olmsted, Sr., William Robinson, Charles Platt. 5. Describe briefly the following items: *Acer plantanoides* (Norway maple); *acer saccharum* (sugar or rock maple); *acer tataricum ginnale*; *acer polymorphum*; *aesculus glabra* (Ohio buck-eye); *alnus glutinosa*; *betula lenta* (sweet birch); *broussonettia papyrifera* (paper mulberry); *catalpa bungeii*, standard; *cedrelia sinensis*; *cereidiphyllum Japonicum*; *fagus sylvatica* (European beech); *fraxinus Americana* (American white ash); *fraxinus excelsior* (English ash); *gleditschia tricanthos* (honey locust); *gymnocladus canadensis* (Kentucky coffee tree); *koelreuteria paniculata* (Japanese varnish tree); *liquidambar styraciflua* (sweet gum); *liriodendron tulipifera* (tulip tree); *magnolia acuminata*.

Report Writing—Weight 1.

Write a report describing your plan of improvement (see drawing), and the reasons for the various changes you advise. Illustrate by pencil sketches the more important features of your plan, such as shelters, entrances and the foliage compositions about them.

MATRON,

DEPARTMENT PUBLIC SAFETY, BUREAU OF POLICE.

\$600 per annum, July 23, 1912.

Experience (Oral)—Weight 4.

1. What is your age? Married? Children? 2. Schooling? 3. Where do you live? How long have you lived in the city? 4. To what extent do you use liquor? 5.

Have you ever been arrested? 6. In general, what is your occupation? 7. How long have you followed it? 8. What are you doing now? 9. Who is your employer? How long have you been so employed? What salary do you receive? 10. What was your previous employment? Who was your employer? Why did you leave? 11. Give a list of the other positions you have held, with particulars as to employers, salaries, and kind of work, going back five years at least? 12. Have you any chronic diseases or physical infirmities? Hearing? Sight? Limbs? Lungs? 13. Sanitary condition of person. 14. Personal fitness.

Practical Questions (Oral)—Weight 6.

1. What are the duties of a matron? What qualifications should she possess? 2. If a woman and a young baby were brought to the station house, under what conditions would you separate them? 3. State in detail the means you would use to have the cells kept clean and in a sanitary condition. 4. If a prisoner objected to being searched, what method would you pursue? 5. How would you treat the following cases: (a) A sick child? (b) A lost child who has become hysterical?

SPECIAL AGENT,

DIRECTOR'S OFFICE, PUBLIC HEALTH AND CHARITIES.

\$1,200 per annum, February 29, 1912.

MATRON, DEPARTMENT OF LAW.

\$1,000 per annum, February 29, 1912.

Experience—Weight 2.5.

1. Where were you educated? State fully and in detail the names and locations of the educational institutions you have attended and the courses of study pursued

by you in each. Give date of graduation. If you have pursued any post-graduate courses of study, state fully what studies and when, where, and for what length of time they were pursued. 2. State to what extent you are acquainted with and what practical knowledge you have of the resources of public and private charities and methods of investigation, especially with reference to non-support cases, and proper reference of miscellaneous cases to suitable agencies. 3. State fully and in detail all the practical experience you have had either as a social worker or as a matron, or in occupations of a similar character. State (a) when, giving dates; (b) where; (c) by whom you were employed; (d) the salary or compensation received; (e) the nature of your duties in each case. If there are any branches of social work in which you regard yourself as especially expert, state what branches. 4. If not fully covered in answers to questions hereinbefore given, state fully what has been your business or occupation for each of the past five years, including a statement in detail as to your present employment. If you are now unemployed, state how long you have been so. 5. State any additional facts which may tend to show your fitness for the position for which you have applied.

Practical Questions—Weight 7.5.

1. Outline the non-support laws of Pennsylvania covering the following points: (a) How is desertion or non-support defined for purposes of the law? (b) Who has the power to proceed against a non-supporting parent? (c) What penalties may be imposed upon conviction? 2. Give, step by step, the procedure to be followed in the prosecution of a non-supporting husband from the telling of the story of the wife at the office of the City Solicitor to the conclusion of the matter, giving the alternative steps in each instance where such alternative steps are

provided by law. 3. If a woman seeking the help of the Solicitor's department introduces her story by saying that her husband has deserted her, what other facts do you need to know in order to advise her accurately? 4. What other city departments are likely to be called upon for co-operation in handling adequately cases of parental neglect and non-support? (a) Name these departments. (b) State the power of each which enables them to give their co-operation. (c) What procedure must be followed in each instance to secure this co-operation? 5. What private charities are likely to be called upon for co-operation in handling adequately cases of parental neglect and non-support? (a) Name these charities. (b) State the power of each which enables them to give their co-operation. (c) What procedure must be followed in each instance to secure this co-operation? 6.-7. How would you advise persons coming to you with the following: (a) A request for transportation of an unemployed woman to Pittsburgh? (b) A request for a doctor to be sent to a house where there is illness? (c) A complaint that the children in a certain home are being abused by their parents, (d) An appeal from a working girl for help in collecting wages due her? (e) A complaint that a certain house is unfit for habitation? (f) A complaint that an infant has been deserted in the basement of a vacant storeroom? 8. Is it possible to get support for an illegitimate child? If so, outline the procedure. 9. How would you advise a woman coming to you with the following: Husband deserted a year ago has gone to Scranton; wants him brought back to Philadelphia, as she has only learned his address. 10. Who pays the cost of the prosecution of non-support as outlined in question 9?

MESSENGER, ANY DEPARTMENT.

\$600—\$900 per annum, February 28, 1912.

Arithmetic—Weight 1.

1. Add 2,423, 4,621, 5,486, 2,634. 2. Subtract 34,232 from 68,465. 3. Multiply 3,456 by 32. 4. Divide 6,848 by 4.

Plain Copy—Weight 2.

The interest charge on the entire cost of the Filtration Plant, \$27,525,000, together with the Sinking Fund charge on the same, make the total cost of the Filtration Plant alone \$2,029,708.33 per annum, which is the amount the citizens of Philadelphia are called upon to pay through taxation; deducting this from the amount which is saved by the monetary gain due to the decrease in typhoid fever, as per the above table, a net gain of \$812,085.66 $\frac{2}{3}$ per annum to the citizens is shown. It will thus be seen that the Filtration Plant has amply paid, both in its human and monetary aspects.

Penmanship—Weight 1.

This subject will be marked on the writing in the Plain Copy.

Personal Fitness—Weight 3.

1. Judgment: (a) If, while on duty as a watchman, you noticed several persons acting suspiciously around the place, what would you do? (b) What kind of a man would make a good messenger? 2. Manner of approach. 3. Appearance: Bearing. Clothing. Hands and face. 4. Activity.

Reading Addresses (Oral)—Weight 2.

(Selected from a City Directory.)

Spelling—Weight 1.

1, watch; 2, loaf; 3, hall; 4, place; 5, chief; 6, guard; 7, prompt; 8, trouble; 9, quiet; 10, employ; 11, build; 12, broke; 13, odor; 14, revolver; 15, burglar; 16, detect; 17, wood; 18, duties; 19, rule; 20, locked.

MESSENGER, GUIDE, ANY DEPARTMENT.

\$900 or more per annum, March 5, 1912.

Arithmetic—Weight 1.

1. Add 59,684, 38,769, 46,958, 65,432, 37,597. 2. Subtract 37,869 from 7,868,492. 3. Multiply 68,456 by 374. 4. Divide 77,280 by 28. 5. What will $165\frac{3}{4}$ dozen erasers cost at 24 cents a dozen?

City Information—Weight 2.5.

1. Who was the founder of Philadelphia? 2. In what year was Philadelphia settled? 3. About how many people does it now contain? 4. Where is Philadelphia's largest filter plant? 5. How does Fairmount Park compare in size with the parks of other large cities of the world? 6. Name five large department stores in Philadelphia. 7. How would you direct visitors to go from City Hall: (a) To Fairmount Park? (b) To Baldwin Locomotive Works? (c) To Independence Hall? (d) To Betsy Ross House? (e) To League Island? (f) To Carpenter's Hall? (g) To Willow Grove Park? 8. Mention five things for which Philadelphia is noted, either industrially or historically. 9. Where is: The United States Mint? Girard College? The Masonic Temple? 10. (1) To what Department would you direct a person who wanted: (a) To pay his taxes? (b) To inquire concerning the arrest of a friend? (c) To find out about lost or stolen goods? (d) Information as to the erection of

a fire escape? (e) To complain concerning a defective pavement? (f) To take a public school child to have its teeth examined? (2) On what floors of City Hall are the following offices: (a) Police Bureau? (b) Bureau of City Property? (c) City Controller? (d) Mayor's Office? (e) Electrical Bureau? (f) Sheriff's Office?

Penmanship—Weight 1.

This subject will be marked on the writing in the Plain Copy.

Personal Fitness—Weight 2.5.

1. Judgment: (a) If, while on duty as a watchman, you noticed several persons acting suspiciously around the place, what would you do? (b) What kind of a man would make a good messenger? 2. Manner of approach. 3. Appearance: Bearing. Clothing. Hands and face. 4. Activity.

Plain Copy—Weight 1.

Under the provisions of the Ordinance approved April 12, 1909, relating to the erection of electric signs, many signs have been erected and have given to the City the benefit of 32,507 incandescent lamps. Plans have also been completed for the erection of 56 ornamental standards around Independence Hall, and it is expected that this work will be completed by the Fourth of July. Arrangements were also made during the year for the installation of direct and private telephone lines from every pawnbroker's office to the Police Telephone Room in the City Hall. The installation has been completed, and the switchboard service covering this service was erected at the cost of the telephone company.

Reading Addresses (Oral)—Weight 1.

(Selected from a City Directory.)

Spelling—Weight 1.

1, common; 2, vicinity; 3, deposit; 4, construct; 5, subway; 6, possible; 7, business; 8, residence; 9, recommend; 10, secure; 11, report; 12, statement; 13, society; 14, property; 15, demand; 16, improve; 17, perform; 18, owner; 19, personal; 20, material.

MESSENGER, WATCHMAN (DAY AND NIGHT),
ANY DEPARTMENT.

Less than \$600 per annum, March 11, 1912.

Arithmetic—Weight 1.

1. Add 6,928, 3,796, 7,652, 4,375. 2. Subtract 38,764 from 96,856. 3. Multiply 6,875 by 25. 4. Divide 1,608 by 6.

Penmanship—Weight 1.

This subject will be marked on the writing in the Plain Copy.

Personal Fitness—Weight 3.

1. Judgment: (a) If, while on duty as a watchman, you noticed several persons acting suspiciously around the place, what would you do? (b) What kind of a man would make a good messenger? 2. Manner of approach: 3. Appearance: Bearing. Clothing. Hands and face. 4. Activity.

Plain Copy—Weight 2.

Make an accurate copy of the following:

Of course, the amount of revenue is not great, nor is it one from the magnitude of the work that can be said to be encouraging, nevertheless, the fact that the Bureau is not only self-sustaining, but a revenue producer, is something that your Honorable Bodies should constantly bear in mind, coupled with the fact that the revenue-producing power of this Bureau is bound to increase year by year, having increased nearly \$1,000,000 since 1902 and during the last year showing an increase of \$207,528.70.

Reading Addresses—Weight 2.
(Selected from a City Directory.)

Spelling—Weight 1.

1, tools; 2 pipes; 3, machines; 4, pumps; 5, plant;
6, room; 7, store; 8, factory; 9, workman; 10, haste;
11, answer; 12, reply; 13, names; 14, robber; 15,
thief; 16, message; 17, collect; 18, officer; 19, market;
20, arrest.

OVERSEER, DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$1,200 per annum, March 1, 1912.

Experience—Weight 2.

(See page 527.)

Arithmetic—Weight 2.

1. Add: 479.632, 764.927, 32.648, 21.906, 17.642, 875.921. 2. What would be the cost of the following lumber: 10 pieces 3-inch by 10-inch by 16 feet, at \$55 per thousand; 24 pieces 3-inch by 4-inch by 12 feet, at \$48 per thousand? 3. At $30\frac{1}{2}$ cents per square foot, what would it cost to plaster the walls and ceiling of a room 48 feet by 20 feet by 12 feet, no allowance being made for doors and windows? 4. How many cubic yards of broken stone would be required to cover a road 15 feet wide and 450 feet long to a depth of 3 inches? 5. If a gallon of paint will cover 200 square feet of surface, how many gallons would be used in painting the outside walls and roof of a building as follows: Length, 84 feet; width, 27 feet; height, to eaves, 16 feet; height, to ridge pole, 24 feet?

Practical Questions—Weight 4.

1. Make the sketch of the page of a time book and show how it would be kept. 2. If there were indications of a waste of material in the carpenter shop, how would you satisfy yourself with regard to it, and if found to be so,

what steps would you take to overcome the waste? 3. If a ditch for a sewer or water pipe were dug directly across the main driveway of the grounds, how would you provide for the use of the driveway and how would you have the ditch filled in so as to get the road in permanent shape as quickly as possible? 4. Assuming the employment of 200 men with 5 foremen, state what arrangements you would make to keep in touch with the work that was being done? 5. If a water pipe should burst and undermine the foundations of a brick building, what would you do in the way of temporary repairs to prevent further damage to the building? 6. Suppose it was desired to build a short piece of road over which there was to be a heavy hauling. Show how this could be built, using, as far as possible, old material that might be about the grounds. 7. The following are taken from the specifications for a building to be erected. Explain each one, using diagram wherever possible: (a) Bonding. Header bricks must be introduced every seventh course, and to extend the entire width of the wall. (b) Door sills. Provide and set, where shown, $7\frac{1}{2}$ -inch dressed bluestone or granite sills, cut with threshold wash and seats for frame, the same to be full thickness of wall, with $1\frac{1}{2}$ -inch projections on the outside. (c) Floor construction. The second and third floors to be constructed of 3-inch by 12-inch rough yellow pine joists, set 16 inches on center, properly bridged in each span with 1 by 3-inch cross bridging. (d) Chimney cap. Provide 3-inch flag or bluestone chimney caps where shown, the same to have hole cut in for flue. (e) Stairwork. Build the stairs where shown on the plans, with $1\frac{1}{4}$ -inch yellow pine treads, with nosing and $\frac{7}{8}$ -inch yellow pine risers, well nailed upon three 3 by 12-inch yellow pine horses or beams, planed. The horses to be properly secured to platform or landing construction.

Report Writing—Weight 2.

Write a report of from 150 to 200 words to the Civil Service Commission, Philadelphia, of a general inspection you have made of the buildings, roads and grounds of some institution. Call special attention to any need of repairs which seem necessary. Do not sign your name to this report; use your examination number instead.

ASSISTANT PHOTOGRAPHER,
DEPARTMENT PUBLIC SAFETY, BUREAU OF POLICE.

\$1,200 per annum, October 8, 1912.

Experience—Weight 4.

(See page 527.)

Practical Questions—Weight 6.

1. State in detail how the time of exposure and size of stop have to be varied according to: (a) The kind of subject. (b) The character of room. (c) The time of day. (d) The season of the year. 2. What is meant by the focal length of a lens, and how is it measured? 3. Describe a completely equipped camera for portrait work, being careful to mention the separate parts, how they are used and what is their purpose. 4. Describe fully the process of developing and fixing a plate. How may the result be varied by the use of different developers? 5. Give a full description of the process of printing: (a) For printing-out paper. (b) For developing paper. 6. Describe two ways by which brown prints may be made. 7. How should a criminal be photographed to secure an accurate photographic record of him? 8. Upon what physical principles is the Bertillon system of measurements based? 9. How should the Bertillon records of a criminal be classified? 10. What items should a com-

plete Bertillon record of a criminal contain? 11. What are the defects of the practical use of the Bertillon system? 12. Write out a typical Bertillon record of a mole on the left cheek of a male criminal.

PILOT, DEPARTMENT PUBLIC SAFETY,
BUREAU OF POLICE.

\$1,250 per annum, October 18, 1912.

Experience—Weight 5.

(Same as for POLICE SERVICE. See page 587.)

Arithmetic—Weight 1.

1. The distance from Washington avenue wharf to Marcus Hook, Pa., is 16.85 miles, and from Washington avenue wharf to Reedy Island Quarantine, 37.94 miles. What is the distance from Marcus Hook to Quarantine Station, and how long will it take a boat to make the return trip, if on the down trip she goes 7.03 miles an hour, and on the up trip 6.6 miles an hour? 2. Two boats making a uniform rate of 15.5 miles an hour start at the same time, one reaching its destination in $7\frac{3}{4}$ hours and the other in $12\frac{1}{2}$ hours. How much farther did the one go than the other? 3. The expenses for operating a tug boat for one month were \$325.65. During the next month these expenses were reduced 15 per cent. Find the operating expenses for the second month. 4. Find the total of the following expenses for September: Salaries: 1 commanding officer, \$150 per month; 1 pilot, \$1,250 per year; 5 deckhands, \$1.75 per day. Supplies: 12 tons coal, \$6.50 per ton; 35 gallons oil, 19 cents gallon; 75 yards rope, 13 cents a yard. Repairs: Mending hawsers, \$3.75; replacing deck, \$7.60; bolts, etc., for repairing stack, \$3.25; renewing plates in boiler: Labor, \$6.50; materials, \$17.75.

Personal Fitness—Weight 2.

1. What kind of a man do you think a pilot should be physically? 2. What authority has a pilot when on duty on board a vessel? 3. What would you do in case the commanding officer disputed your authority? 4. What qualifications other than physical do you think a pilot should possess? 5. In case, while coming up the river a few miles below Wilmington, Del., an accident, endangering the cargo or the lives of the passengers, should occur, what would be your action? Assume the accident and tell what you would do in that case. 6. Physical fitness: To be determined from the examination by the medical examiner. (See page 582.)

Practical Questions—Weight 2.

1. What duties does a pilot perform? 2. What are the limits of the harbor of Philadelphia? 3. What work are the police boats called upon to perform? 4. Of what does the equipment of a police boat consist? 5. How much earlier or later than at Chestnut street wharf is it high tide at: (a) Chester? (b) New Castle, Del.? (c) Reedy Island Quarantine? (d) Bombay Hook Light House? (e) Cape Henlopen? 6. What is the average duration of the rise of the tide at Philadelphia? 7. What is about the height of the tide at Philadelphia? 8. What is meant by a vessel being "under way"? 9. Mention the whistle signals provided by the rules for inland waters. 10. Give at least one signification or meaning for each signal mentioned in question 9, telling under what condition it is to be used. 11. What is the penalty for a pilot flashing the rays of a searchlight into the pilot house of a passing vessel? 12. On which side of vessels are green lights displayed? 13. On which sides of the vessels are the red lights displayed? 14. On what parts of a vessel are white lights displayed? 15. What is meant

by "visible" when applied to lights on shipboard? 16. What are the proper fog signals for the following: (a) A steam vessel under way, except where towing other vessels or being towed? (b) A steam vessel when towing other vessels? (c) A vessel towed? (d) A vessel at anchor? 17. What are the distress signals for both day and night?

PRINCIPAL, BOARD OF RECREATION, MAYOR'S OFFICE.

\$1,200 per annum, March 13, 1912.

Experience and Personality—Weight 2.

1. Name and home address. 2. Age, height (in stockings); weight (in gymnasium costume). 3. What high school have you attended? How many years? 4. If a graduate of a normal school of physical training, give the name and location of the institution, the length of the course, and the date of graduation. 5. State your experience in playground work and in teaching physical training after your graduation. Give the location of grounds, schools, associations, etc., and the length of service in each. 6. What physical activities (track and field events, team games, swimming, skating, dancing, etc.) have you mastered sufficiently to be able to teach them? 7. State your experience in gardening and farming. 8. Which appeals to you most, the teaching of young children, of adolescent girls, of adolescent boys?

Hygiene—Weight 1.

1. (a) What volume of fresh air should be supplied per minute to every child in a closed room? (b) What are the effects upon pupils of an insufficient supply of fresh air? 2. Explain what is understood by: (a) The plenum system of heating and ventilating. (b) The vacuum system. (c) By direct heating. (d) By indirect heating. 3. Given a ten-minute gymnasium period for

children of seven years, write a lesson chiefly hygienic in its purposes: (a) For the school gymnasium. (b) For the playground. Give your reasons for the selection of the exercises. 4. What is meant by personal hygiene? How would you interest your pupils in it? 5. Discuss the hygienic value of physical training, showing by examples what you understand by the term.

Personal Practice (Oral)—Weight 3.5.

Physical Training—Weight 1.5.

1. (a) What is the aim of physical training? (b) What means are employed to accomplish this aim? 2. (a) Of what types of exercise should an hour lesson consist? (b) What relative value would you place on the different types of exercise? 3. Outline a series of games suitable for: (a) Children up to 8 years of age. (b) Children up to 12 years of age. (c) Boys over 12 years of age. (d) Girls over 12 years of age. Arrange these games in the order of their relative importance. 4. Outline a series of exercises on the horizontal bar for: (a) Boys. (b) Girls. State the age of the children, the height of the bar, and the reasons for selecting the exercises.

Physiology—Weight 1.

1. What is fatigue? Are its effects local? State fully the reasons for your answers. 2. As to their effects, is there any difference between exercises done upon command and exercises performed rhythmically? State fully the reasons for your answer. 3. Is good posture of mental value? State the reasons for your answer. 4. Describe the circulation of the blood, explaining the changes that it undergoes in its passage through the system. 5. (a) Does running first affect the respiration or the circulation? Explain the successive steps showing how this effect is produced. (b) Is there a characteristic difference in

the organs of the circulatory system of children and of adults? Does running affect children and adults in the same manner? State fully the reasons for your answers.

Social Service—Weight 1.

1. How can the playground and the recreation center best fill its place as an institution for social service? 2. Older girls, as a rule, do not take kindly to vigorous exercise. How would you interest them in a vigorous play life, and in track and field work? 3. What books and magazines have you read devoted to social service? Illustrate how the aims outlined in these books may best be reached. 4. Discuss the problem of street play compared to play in the playground.

PRINCIPAL, BOARD OF RECREATION, MAYOR'S OFFICE.

\$1,200—\$1,300 per annum, November 9, 1912.

ASSISTANT PRINCIPAL, BOARD OF RECREATION,
MAYOR'S OFFICE.

\$1,000 per annum, November 9, 1912.

Experience—Weight 3.

Same as above (see page 564).

Personal Fitness—Weight 2.

To be determined by test in playground and gymnasium work.

Practical Questions—Weight 4.

1. What forms of activity would you prefer (a) on the playground? (b) in the gymnasium? Why? 2. What should be the effects of play? 3. What would you do in case of (a) broken arm, (b) a sprained wrist, (c) a slight cut, (d) a severed artery, (e) contusion, (f) heat prostration, (g) over-exertion? 4. What form of activities would you recommend for the following groups: (a) Boys of six? (b) Boys of ten? (c) Boys of fifteen? (d) Girls of six?

(e) Girls of ten? (f) Girls of fifteen? 5. What course of discipline would you use in the case of: (a) A boy who fights? (b) A boy who uses improper language? (c) A boy who smokes? (d) A boy who cheats? (e) A boy who gambles? (f) A girl who is untidy? (g) A girl who is untruthful? (h) A girl who is quarrelsome? 6. Do you believe in merely supervising the play, leaving the children to their own desires, or in directing and systematizing the play? 7. What effect has over-exertion on heart and lungs?

Report Writing—Weight 1.

Why is Philadelphia justified in spending public money in establishing and maintaining public playgrounds? Write a report on the above subject of not less than 300 words nor more than 500.

SPECIAL AGENT, DIRECTOR'S OFFICE, DEPARTMENT PUBLIC HEALTH AND CHARITIES.

\$1,200 per annum, February 29, 1912.

The questions for this examination are the same as those for MATRON, DEPARTMENT OF LAW. (See page 552.)

SPECIAL EVIDENCE AGENT, DEPARTMENT OF LAW.

\$1,500 per annum, June 6, 1912.

The questions used for this examination were the same as those used for INVESTIGATOR, CIVIL SERVICE COMMISSION. (See page 545.)

SPECIAL OFFICER, ANY DEPARTMENT.

\$600—\$900 per annum, February 28, 1912.

The questions for this examination were the same as those for MESSENGER. (See page 555.)

SPECIAL OFFICER, ANY DEPARTMENT, ANY BUREAU.

\$900 per annum and over, July 6, 1912.

Experience—Weight 1.5.

(See page 527.)

Arithmetic—Weight .5.

1. Add: 37,468, 59,427, 80,043, 98,628, 74,387. 2. Subtract 48,997 from 49,898. 3. Multiply 78,042 by 846.
4. Divide 7,459,902 by 87.

Copying—Weight 1.

Make an exact copy of the following:

There have been deposited at Riker's Island of ashes and street sweepings:

In 1902	378,881 cubic yards
In 1903	1,266,558 cubic yards
In 1904	1,418,893 cubic yards
In 1905	1,726,352 cubic yards

This has practically finished the fill on 63 acres on the westerly side of the island. Thus, Riker's Island, which is City property, has already been raised to an area of 152 acres, which will accommodate the charitable and correctional institutions of the City, leaving Blackwell's Island to be used for a public park, and the new fill at Riker's Island on the easterly side, preparations for which are being made by the Department of Docks and Ferries, is a fill of considerable area, not less than 140 acres.

Penmanship—Weight .5.

This subject will be marked on the writing on the Plain Copy.

Personal Fitness—Weight 4.

1. Judgment. (a) Suppose you discovered fire in the building you were watching, what would you do? (b) If some persons were acting in a disorderly manner on prop-

erty under your charge, how would you act? 2. Manner of approach. 3. Appearance, bearing. Clothing. Hands and face. 4. Activity.

Reading Addresses (Oral)—Weight 2.
(Selected from a City Directory.)

Spelling—Weight .5.

1, burglar; 2, revolver; 3, disturb; 4, peaceful; 5, condition; 6, mayor; 7, Chestnut street; 8, uniform; 9, scrubbing; 10, service.

ASSISTANT SUPERINTENDENT (CITY HALL), DEPARTMENT
PUBLIC SAFETY, BUREAU OF CITY PROPERTY.

\$2,000 per annum, July 29, 1912.

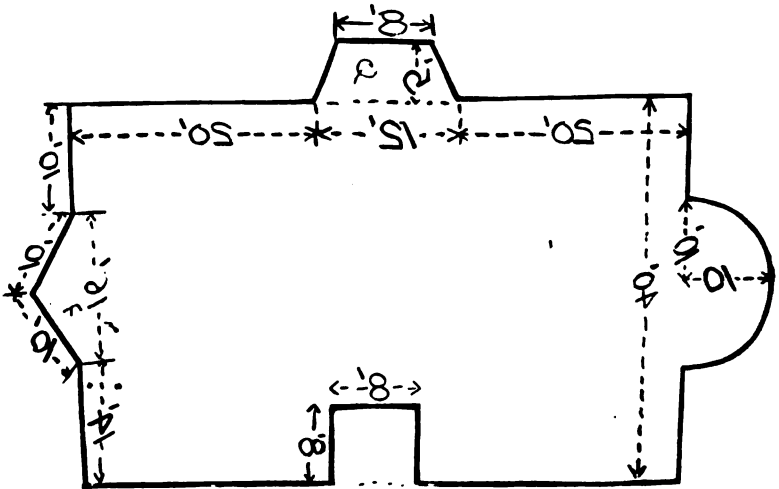
Experience—Weight 2.
(See page 527.)

Duties of the Position—Weight 5.

1. Outline a system for each of the following: (a) Keeping account of tools and supplies. (b) Preventing waste of time by employees. 2. What is the best method of cleaning (a) brass railing, (b) painted wall, (c) linoleum, (d) polished floors, (e) furniture, (f) lavatories? 3. Which is the more desirable and why: To have extensive repairs to building done by City or by private contract? 4. If the paint scales off a ceiling in spots what is the probable cause and how should it be remedied? 5 Write a report to the Chief of the Bureau of City Property criticising this examination room and making suggestions to improve the lighting, the ventilation, the general appearance and condition and equipment of the room for examining 150 candidates at one time. 6. What precautions would you take with regard to: (a) Fires in connection with the disposal of waste? (b) The prevention of the origin and spread of disease?

Estimates—Weight 3.

1. A room is 32 feet long, 26 feet wide and 15 feet high. The walls are of brick and are 24 inches thick. There are four doors each $3\frac{1}{2}$ feet by 7 feet and eight windows each 3 feet by 6 feet. (a) How many bricks (each 8 inches by 4 inches by 2 inches) in the wall (making deductions for all openings and allowing nothing for mortar)? (b) How many board feet in the floor ($1\frac{1}{2}$ -inch lumber)? (c) How many square yards of plastering, not counting ceiling and deducting all doors and windows? 2. What will it cost at \$1.92 per yard to carpet the floor of the room mentioned in problem 1 if the strips, which are $\frac{3}{4}$ -yard wide, are run lengthwise and there is no waste in matching? 3. Calculate the cost of concreting the floor of the room shown in the diagram at \$2.25 per square yard, the concrete being $2\frac{1}{2}$ inches thick? (Diagram on black-board, see reproduc-



tion.) 4. A pay-roll includes 12 foremen, at \$3.25 per day; 6 brick masons, at \$4.20 per day; 3 painters, at \$4 per day; 50 sweepers and cleaners, at \$1.75 per day, and

25 miscellaneous helpers, at \$2 per day. (a) Find the average daily wage paid. (b) Find the amount of the pay-roll for a week of six days.

SUPERINTENDENT OF PUBLIC BATHS, DEPARTMENT PUBLIC SAFETY, BUREAU OF CITY PROPERTY.

\$600 per annum, July 30, 1912.

Experience (Oral)—Weight 3.

1. What is your age? Married or single? Children? 2. Schooling? 3. Where do you live? How long have you lived in the City? 4. To what extent do you use liquor? Cigarettes? 5. Have you ever been charged with any crimes or misdemeanors? 6. In general what is your occupation? 7. How long have you followed it? 8. What are you doing now? Who is your employer? How long have you been so employed? What salary do you receive? 9. What was your previous employment? Who was your employer? Why did you leave? 10. Give a list of the other positions you have held with particulars as to employers, salaries and kind of work, going back five years at least? 11. Have you any chronic diseases, or physical infirmities? Hearing? Sight? Limbs? Lungs? 12. Special training.

Practical Questions (Oral)—Weight 7.

1. If you were in charge of one of the city's public bath houses give a general idea of what you would be expected to do. 2. Tell what you would do in case of each of the following: (a) A boy drowning. (b) Indecent behavior. (c) Defacement of building. (d) A person using the bath with sores or a contagious disease? 3. (a) How often should the pool be emptied and cleaned? (b) How should it be cleaned? (c) How would you keep the building in a sanitary condition? (d) Why is disinfection necessary in a building of this kind? 4. (a) Do you approve of

male patrons wearing clothing while bathing? (b) Why?
 5. (a) What is the value of a swimming pool to a neighborhood? (b) In what character of neighborhood are they of most value?

SUPERINTENDENT IN CHARGE OF WATER FILTERS,
 DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.

\$1,500 per annum, September 7, 1912.

Experience—Weight 3.

(See page 527.)

Arithmetic—Weight 2.

1. Find the cost of covering 63 filter beds each 25 feet by 60 feet to a depth of 15 inches if the cost of the material, ready for distribution, is \$2 per cubic yard and the distribution requires 30 men at \$2.50 per day and 3 men at \$4.25 per day for 6 days. 2. A cylindrical concrete column 8 feet tall and 12 inches in diameter is re-enforced by an 8-inch 25½-pound I-beam at its center. If the cost of steel is \$30 per net ton, the section area of the I is 71½ square inches, and the total cost of the column is \$9, (a) what is the cost of the concrete per cubic yard; (b) what per cent. of the total cost is the cost of the steel? 3. If 6 men clean 2 filter beds, each 20 feet by 60 feet in 3 days, how many men will be required to clean 3 filter beds, each 40 feet by 120 feet, in 4 days? 4. If the daily rate of filtration is 3,400 gallons per square foot, how many square feet of surface will be supplied by a circular conduit 6 feet in diameter, running ½ full at an average velocity of 1 foot per second?

Practical Questions—Weight 5.

1. Tell briefly the following points about each of the filter stations of the City of Philadelphia: (a) Location,

(b) capacity, (c) source of supply, (d) district served, (e) system of filtration used. 2. How do the turbidity and bacterial contents of raw water vary during the year, and how should this variation be provided for? 3. How often and in what manner should the tests of the efficiency of a filter plant be made? What tabular records should be kept? Give a sample table. 4. What three methods of cleaning filters have been used in Philadelphia? Describe in detail two of them. Point out their relative advantages. 5. How should a filter bed be put into operation after cleaning? State in detail the necessary precautions. 6. How do you account for the bacterial efficiency of a sand filter and when it is greatest? What quantity of bacteria in the effluent would indicate that a filter was inefficient? 7. What factors determine the period of service (= time in use between cleanings) of a filter bed? What is the average period of service at the various Philadelphia stations? 8. In a detailed report of the annual cost of a filter plant, what data should be included? Outline a sample annual report.

SUPERINTENDENT OF REAL ESTATE, DEPARTMENT OF PUBLIC SAFETY, BUREAU OF CITY PROPERTY.

\$1,500 per annum, July 24, 1912.

Exerience—Weight 2.

(See page 527.)

Practical Questions—Weight 8.

1. What is a ground rent? How may it be removed? 2. What are the essentials of a deed? 3. In real estate transactions, has a municipality any advantages or disadvantages over and above those a citizen has? 4. How should a search to determine the validity of a title be made? 5. How long are the unsecured debts of a dec-

dent a lien on his property? How may a purchaser protect himself against such a lien? 6. Describe in detail the process of distress for rent, telling also what goods are exempt and under what circumstances goods removed from premises by lessee may be distrained. 7. If a landlord desires to determine a lease but has lost the lease, what course of action is open to him? 8. What condition would you look for in order to determine sale and rental prices? What justifies an increase in rent? 9. Under ordinary circumstances what is a fair percentage of the annual rent to expend on repairs? Under what circumstances would a larger expenditure be justified? 10. Describe in detail the method by which the City acquires property, mentioning all the possibilities of legal action.

TEACHER AND ASSISTANT, BOARD OF RECREATION,
MAYOR'S OFFICE.

\$960 and \$780 per annum, March 12, 1912.

Experience—Weight 2.

(See page 564.)

Personal Practice—Weight 3.5.

Physical Training—Weight 1.5.

1. Take a simple exercise suitable for children of 7 years. Increase its difficulty so that it will be suitable (a) for boys of 15 years, (b) for girls of 15 years. 2. Outline two lessons of 45 minutes to be given in a gymnasium, giving the types of exercise and the time to be given to each. (a) A lesson for boys 7 to 10 years of age. (b) A lesson for girls 12 to 16 years of age. 3. What common postural defects found in children visiting playgrounds may be corrected by physical training? Outline the kind of exercise adapted for each defect. 4. Arrange a progressive series of dancing steps suitable for a class of young women, to be performed in 15 minutes in a gymnasium.

Physiology and Hygiene—Weight 1.5.

1. Explain: (a) In what general respects the food of people in cold climates differs from that of persons in hot climates. (b) In what general respects their clothing differs. 2. (a) Describe the general structure and use of the muscles and the tendons. (b) Tell how the muscles act in producing motion, and how they may be kept in a healthy condition. 3. How does physical exercise affect (a) respiration, (b) the circulation? 4. What physical and mental values have (a) calisthenics, (b) games? Discuss the relative value of calisthenics and games for playground use.

Social Service and Theory of Teaching—Weight 1.5.

1. Which classes would you organize in a neighborhood in which a new playground had just been opened? Why would you organize the classes you mention? 2. Which books or journals have influenced your teaching most? (a) So far as the physical training is concerned? (b) So far as the influence of instruction upon character is concerned? Elaborate your answers. 3. Outline a day's activities for boys and girls of 12 to 15 years of age in a playground and recreation center. State the value of the different activities (a) physically, (b) mentally, (c) morally.

ASSISTANT TEACHER, BOARD OF RECREATION,
MAYOR'S OFFICE.

\$780 per annum, November 9, 1912.

TEACHER, BOARD OF RECREATION, MAYOR'S OFFICE.

\$960 per annum, November 9, 1912.

Experience—Weight 3.

(See page 564.)

Personal Fitness—Weight 2.

To be determined by test in playground and gymnasium work.

Practical Questions—Weight 4.

1. How would you interest the boys and girls on your playground in personal hygiene? 2. Arrange a progressive series of dancing steps. 3. State your views of the subject of playground discipline, giving such rules for conduct as you consider essential and the methods you would adopt to enforce them. 4. Describe five games which you would recommend for girls 8 to 10 years of age in a large playground. In a small playground, which of these would you omit and what others substitute? 5. (a) Arrange in logical order a set of four exercises for boys on each of the following: 1, horizontal bars; 2, horse. (b) Arrange in logical order a set of exercises for girls on each of the following: 1, swinging rings; 2, giant stride. 6. Make up a program for a field day contest for children. State how children should be grouped and the exercises that should be given each group.

Report Writing—Weight 1.

Why is Philadelphia justified in spending public money in establishing and maintaining public playgrounds. Write a report on the above subject of not less than 300 words or more than 500.

SWIMMING TEACHER, BOARD OF RECREATION,
MAYOR'S OFFICE.

\$80 per month, November 9, 1912.

Experience—Weight 3.

(See page 564.)

Practical Questions—Weight 3.

1. Why should swimming be taught to every child? 2.

Give an outline of your methods of teaching swimming.
 3. How would you conduct mass instruction? 4. What method would you employ to resuscitate an apparently drowned pupil?

Personal Fitness—Weight 4.

To be determined by test.

WATCHMAN, ANY DEPARTMENT.

\$600—\$900 per annum, February 28, 1912.

The questions for this examination were the same as those for MESSENGER. (See page 555.)

WATCHMAN (DAY OR NIGHT), ANY DEPARTMENT.

Less than \$600 per annum, March 11, 1912.

The questions for this examination were the same as those for MESSENGER. See page 558.)

WATCHMAN (DAY), ANY DEPARTMENT.

WATCHMAN (NIGHT), ANY DEPARTMENT.

\$900 and over per annum, July 6, 1912.

The questions for this examination were the same as those for SPECIAL OFFICER. (See page 568.)

POLICE SERVICE

CAPTAIN OF DETECTIVES.

DEPARTMENT PUBLIC SAFETY, BUREAU OF POLICE.

\$2,500 per annum, July 11, 1912.

Training and Experience—Weight 2.

1. What is your age? 2. Where and during what years did you receive your education? Give dates, course of study and names of schools. 3. How long have you been connected with the Police Bureau? Give the exact dates, and show whether your service is continuous or not. 4. State the grades or positions you have filled in the service

and how long in each. 5. Have you ever had any experience specifically in detective work? For how long a period, and where? 6. Have you ever had direct charge of any number of detectives? If so, where, for what length of time, and how many men? 7. What was your occupation before you entered the Bureau of Police?

Arithmetic—Weight .4.

1. Add: 296854, 387956, 56843, 9387684, 396875, 4976, 859, 54317, 396497. 2. If the average cost of feeding prisoners is $7\frac{1}{2}$ cents a meal, how much will it cost to feed 7964 prisoners three meals a day for the month of July, 1912? 3. Assuming that the appropriations for the Police Bureau in one year was \$1,275,687.54, what was the amount appropriated the following year if there was an increase of 5 per cent.? 4. Divide 5285268 by 76. 5. Subtract $\frac{5}{8}$ of 40 from $\frac{3}{4}$ of 96.

Criminal Code, Rules and Regulations—Weight 3.

1. Name five (5) crimes classed as felonies. 2 Name ten (10) crimes classed as misdemeanors. 3. In general what is the difference between a felony and a misdemeanor? 4. What is the proper legal procedure upon the arrest of a prisoner until found guilty or acquitted? Outline the various steps in order. 5. Explain what is meant by the term "extradition." 6. Explain what is meant by "circumstantial evidence," "legal evidence," "direct evidence." 7. Under what circumstances must warrants be sworn out before arrests can be made? 8. Under what circumstances is a detective justified in forcing entrance into a dwelling house? 9. Under what circumstances may a detective use his revolver? Give details of two recent cases in which the detective was not justified. 10. Define or illustrate the following: (a) Assault and battery. (b) Aggravated assault and battery. (c) Assault and battery with intent to kill. (d) Manslaughter. (e) Homicide. (f) Murder in the second degree. (g) Murder in the first degree. (h) Forgery. (i) Burglary. (j) Arson.

Duties of the Position—Weight 4.

1. What character of work should distinguish between the plain clothes men and the uniformed patrolmen, and should the former be assigned to duties which can properly be performed by the latter? 2. How would you keep track of and report on the movements, haunts and habits of persons of well-known bad character? What also of well-known criminals? 3. If an organization in the detective force existed whose influence and tendency was to break down departmental organization and efficiency, how would you deal with it? 4. To what extent and by what methods should instruction be given to the detective force? 5. By what means would the illegal sale of liquor in houses of prostitution be detected and what should be the characteristics of a detective in such an assignment? 6. What evidence is deemed competent to convict a keeper of a disorderly house? 7. How are pickpockets usually detected and upon what kind of evidence usually convicted? 8. Are special officers desirable in police districts? Give your reasons. 9. What methods would you adopt upon being informed that a murder had been committed in one of the rooms of a large hotel in the City, and there is no apparent clue? 10. What are your views in relation to the proper methods of investigating a case of incendiarism?

Penmanship—Weight .3.

This subject will be marked on the writing in the entire examination.

Spelling—Weight .3.

Write the correct form of each word below: 1, Commonwealth; 2, official; 3, negligence; 4, ordinance; 5, superintendant; 6, municle; 7, felony; 8, solication; 9, acceptance; 10, burglary; 11, mallicious; 12, misdemeanor; 13, colusion; 14, conceal; 15, counterfit; 16, fictitious; 17, summary; 18, homacide; 19, fradulent; 20, proceedure.

PATROLMAN AND MOUNTED PATROLMAN.

\$2.25 to \$3.00 per day, February 13, 1912.

Arithmetic—Weight .5.

1. Add 78468, 69784, 36546, 54675. 2. Subtract 3458645 from 9684976. 3. Multiply 684596 by 47. 4. Divide 450632 by 7.

City Information—Weight 1.

1. Who is the Director of Public Safety? Who is the Director of Public Works? Who is the City Solicitor? Who is the Director of Supplies? Who is the Director of Health and Charities? 2. In what direction do the cars run on Eleventh street? In what direction do the cars run on Fairmount avenue? 3. Where is Independence Hall? Where is the University of Pennsylvania? Where is the Zoological Garden? 4. What trolley car would a person take in going from Eighth and Pine streets to Mt. Airy? What car would he take to go from Broad and Arch streets to the Public Aquarium at the old Fairmount Water Works? 5. In what direction is Tacony from City Hall? In what direction is City Hall from Darby? 6. How many miles is it from City Hall direct to the North Philadelphia station, Pennsylvania Railroad? 7. What main street crosses Broad street at No. 600 North? What main street crosses Broad street at No. 1500 North? What main street crosses Broad street at No. 2100 North? What main street crosses Broad street at No. 500 South? What main street crosses Broad street at No. 1300 South? What main street crosses Broad street at No. 2100 South? 8. Name three daily Philadelphia newspapers, and locate their main offices. 9. What steam railroad companies operate lines within the City limits? 10. Tell what qualifications you think a patrolman should possess.

Memory Exercise—Weight 2.

Reproduce the following (read aloud twice to the applicants): Pick up Charles Jones, who is charged with breaking into a house at Twenty-fifth and York streets early on last Saturday morning and carrying off a lot of jewelry, silverware and clothing. Jones is an old offender. He is 40 years of age, 5 feet 7 inches in height and has a scar on his left chest.

Penmanship—Weight .5.

Copy the following in your best handwriting: He will allow no one to communicate in any way with prisoners without permission from the proper authority, and will at once report any suspicious noise by the prisoners.

Physical—Weight 4.

1. Name of applicant? 2. Residence? 3. Age—Years? Months? 4. Height—Feet? Inches? 5. Weight? (The requirements for height, weight and age shall be as follows: Minimum height=5 feet 8 inches. Weight=135—188 pounds. Age=22 to 37 years. Minimum weight increases at the rate of 5 pounds per inch in height, and maximum weight increases at the rate of 9 pounds per inch.) 6. Girths—Girth of chest expanded, at ninth rib, inches? Contracted, inches? Girth of abdomen, normal, inches? 7. Strength test—Strength of back (average 300 pounds)? Legs (average 350 pounds)? Chest—Push and pull (total average 175 pounds)? Forearms (average both 175 pounds)? Total, pounds? (Reject if the total strength falls below 1,000 pounds.) 8. Teeth—Are the teeth insufficient or defective? (There must be at least two molar teeth to each jaw, on each side, in good apposition. Jaws must be free from badly broken or decayed teeth so far destroyed as to render filling or crowning impossible. Missing teeth may be supplied by crown or

bridge work or a good plate. At least twenty natural teeth must be present.) 9. Hands—(Reject for loss of thumb or any part thereof, loss of forefinger, loss of distal phalanges of any two fingers.) 10. Feet—(Reject for severe flat foot or broken down arch, bunions, if large or inflamed, ingrowing toe nails; reject for loss of great toe or other toes, any malformation sufficient to impair walking.) 11. Spine—Is the spine crooked or irregular? (Reject for serious deviation or rigidity.) 12. Ears—(Reject if less than 6-12 hearing in both ears, except where impacted wax is present. Tested with tuning fork, 200 vibrations.) 13. Eyes—(Reject if vision is below 15-20 for one eye and 15-50 for other, or 15-20 for both. Note partial or complete color blindness, tested with the lantern test.) 14. Lungs—Are there any indications of disease of the organs of respiration? On inspection? Percussion? Auscultation? 15. Heart—Are there any indication of disease of the heart or blood vessels? On palpitation? Auscultation? Pulse rate, lying? Standing? After exercise, 50 steps, stationary running? Blood pressure, lying? Standing? 16. Skin—(Reject for any parasitic or contagious or serious form of skin disease.) 17. Scars; stiff, painful or enlarged joints; deformities or malformations? (Give full particulars when present, and reject if they impair usefulness.) 18. Hernia—(Reject for all forms.) 19. Varicose veins, haemorrhoids, fistula in ano, or hydrocele—(Reject when present.) 20. Venereal diseases—Are there any evidences of gonorrhea or syphilis present? (Reject for any discharge, swollen glands, or other evidences of venereal infection.) 21. Urine—Specific gravity? Albumen? Sugar? (Postpone if traces of albumen only are present. Reject if albumen persists.) 22. Vaccination—Has the applicant been suc-

cessfully vaccinated? (Postpone until vaccinated, if necessary.) 23. Alcohol or drug or tobacco—(Reject for excessive use.) 24. Remarks.

Report Writing—Weight 2.

Write a letter to the Civil Service Commission, Philadelphia, telling just what you would do if in walking up Eleventh street to-night you should see a girl about seven years old crying and who said she was lost.

PATROLMAN.

\$2.25 to \$3 per day, November 2, 1912.

Arithmetic—Weight .5.

1. The pay of 25 patrolmen at a station house for the month of October was as follows: \$90, \$87.50, \$75.25, \$78.25, \$83.33, \$67.75, \$89.50, \$65.75, \$68.75, 57.65, \$78.45, \$88.65, \$75.83, \$54.75, \$83.75, \$58.75, \$64.50, \$48.75, \$55.55, \$63.75, \$77.60, \$85.95, \$67.80, \$78.40, \$82.90. Find the total amount. 2. The cost of erecting a station house in one district was \$75,497.83. The cost of another was \$7,389.47 less. What was the cost of the second? 3. Find the cost of 7,685 uniforms at \$37.50 each. 4. If 755 helmets cost \$2,831.25, what is the cost of one?

City Information—Weight 1.

1. Who is the Assistant Director of Public Safety? 2. Who is the Superintendent of Police? 3. Who is the Director of Wharves, Docks, and Ferries? 4. Who is the District Attorney? 5. Who is the Receiver of Taxes? 6. Which of these are appointed and which are elected? 7. Who appoints those who are appointed? 8. For how long a term are those elected who are elected? 9. How many captains of police are there? 10. Who is the Mayor's Secretary? 11. In which direction do the cars run on

Tenth street? 12. In which direction do the cars run on Seventeenth street? 13. In which direction do the cars run on Morris street? 14. In which direction do the cars run on Erie avenue? 15. In which direction do the cars run on Norris street? 16. Where is Betsy Ross House? 17. Where is Franklin's grave? 18. Where is the Philadelphia Hospital? 19. Where is Carpenter's Hall? 20. Where is Girard College? 21. What trolley car should a person take at Third and Tasker streets to go to Fairmount Park? 22. What car should he take at Frankford avenue and Huntingdon street to go nearest to Washington avenue wharf? 23. In what direction from League Island is Frankford? 24. In what direction is Point Breeze from Wissahickon? 25. What is the distance on Market street between the Delaware and Schuylkill rivers?

Memory Exercise—Weight 2.

Reproduce the following (read aloud twice to the applicants):

Look for James Gore, one of the burglars who broke into the jewelry store at Ninth and Oxford streets late Monday night, October 28, 1912, and carried off a tray of rings, six gold watches and a dozen bracelets. He is 45 years old, 5 feet 8 inches in height, dark complexion, black hair and mustache. A gold filled upper front tooth. Weighs about 175 pounds and wore a brown cutaway suit.

Penmanship—Weight .5.

This subject will be marked on the writing in the letter.

Physical Test—Weight 5.

(See page 582.)

Report Writing—Weight 1.

Write a letter to the Civil Service Commission, Philadelphia, telling what you would do if to-day you saw a boy, ten years old, run down by a touring car, whose occupants had not noticed the accident. Sign the letter "John Doe."

DETECTIVE.

\$1,700 per annum, October 31, 1912.

Experience—Weight 2.5.

(See page 587.)

Laws and Ordinances—Weight 1.

1. Tell what you understand to be the meaning of the following and, if you desire, give examples: (a) Breach of ordinance. (b) Burglary. (c) Professional thief. (d) Opium joint. (e) Accessory after the fact. (f) Circumstantial evidence. (g) Extradition. (h) Bail. (i) Warrant. (j) Bertillon system. 2. What powers has a detective or patrolman as compared with a private citizen. (a) When a felony is committed in his presence? (b) When the commission of a felony is attempted in his presence? 3. In your judgment what are the elements that constitute a valid arrest? 4. To what privilege or right is every person arrested immediately entitled? 5. What do you understand by the term "summons"? What is its purpose, and in what class of cases can and does a magistrate make use of it in preference to a "warrant"? 6. Name all the conditions under which an officer may forcibly enter a building to make an arrest. Mention a circumstance or condition under which he could not do so. 7. Outline the rules, regulations, restrictions or laws under which the liquor traffic is conducted. 8. What is malicious mischief and what element must be present before such a charge can be made? 9. What is the crime known as "gambling"? What does it include, and what are an officer's powers and duty in such a case? How would you proceed to get the necessary evidence? 10. What is the proper procedure in the case of a fugitive from justice in this State?

Personal Fitness—Weight 2.5.

1. What traits or qualifications over and above those possessed by an ordinary patrolman do you consider a de-

tective should possess in a marked degree? 2. What evidence can you submit tending to establish the fact that you possess any or all of these? 3. Supposing that in search for evidence, you were on terms of intimacy, and in a room with a number of desperadoes. By some accident your true character and status is revealed to them. What would you do? 4. Discuss the temptations a detective might be subjected to and outline your action in such cases. Would it not be well to yield to them and to embrace the opportunities presented, in certain cases? Which cases? 5. Is your health good? Have you been sick for any length of time since you became connected with the Department? If so, what was the disease? How long were you sick? 6. Personal appearance.

Practical Questions—Weight 3.

1. Discuss, with reference to their places and purposes in modern police systems: (a) Night court, (b) juvenile court. 2. Mention the various methods of criminal identification (other than the Bertillon system) in use in good police practice, and outline the procedure in each, and the advantages one possesses over another. 3. Outline the duties devolving upon a detective force in a large city. 4. If you were detailed to discover and arrest a man known to belong to a criminal class for some years, and known to be in the city now, but who was personally unknown to you, what would be your method of procedure until you had succeeded in effecting his capture? 5. Discuss the part memory plays in the equipment of a detective. 6. What do you understand by the term "shadowing"? How should it be done? What aids might you make use of in work of this kind? 7. A woman has been found dead—apparently murdered. From what is known of her she was a woman of education and refinement with no associations with the criminal class. Outline the line of investigation

you would make or have made by others, what particular facts relating to the scene of the murder you would record, and in general all you would do to get on the track of the murderer. 8. Suppose you were given a book or diary for your own use as a detective. What use would you make of it? 9. Is there any advantage, so far as efficiency is concerned, in having members of the detective force, as far as possible, unacquainted with each other and persons outside of the Department? Give your reasons in each case. 10. What is meant by the "vice squad"? What are its purposes and objects? Describe the methods by which it has sought to attain these objects. Do you have in mind any better method of dealing effectively with the subject? Describe it.

Report Writing—Weight 1.

Write a report to the Civil Service Commission, giving your views, substantiated and supported by reasons, arguments and facts, as to the desirability of having in large cities central office detective squads, under a chief of detectives, over the other method of having precinct or district detectives under temporary detail from the uniformed ranks. Sign this report "John Doe."

SERGEANT OF POLICE.

\$1,200 to less than \$1,400 per annum, July 17, 1912.

Experience—Weight 1.

Any false statement made by the applicant in answering these questions will be regarded as good cause for excluding him from the eligible list, or for removal or discharge during probation or thereafter.

1. What is your age? 2. (a) In what grade were you when you left the grammar school? (b) What high school did you attend? How long? What course? (c) What technical training have you had as apprentice, or in busi-

ness school, or in college, or in technical school? 3. In general what is your occupation? How long have you followed it? 4. When, where, for whom, and how long have you worked at this occupation, and what wages or salaries have you received in each case? 5. From what positions have you been discharged for cause, and what were the causes? 6. State exactly and in detail the kind of work you were doing in each of the leading positions you have filled in the past five years. 7. Give the particulars about any special work you have done in addition to the above, which tends to qualify you for the position you are now seeking. 8. Give in full your experience in the Bureau of Police, length of service, etc.

Arithmetic—Weight .5.

1. Add: 97684.50, 38684.96, 36849.75, 69286.47, 69427.68, 249786.42, 84297.63, 37649.75. 2. A man had 96 acres of land. He sold $\frac{1}{2}$ of it to one man; $\frac{1}{3}$ of it to another man, and $\frac{1}{8}$ to another. How many acres had he left? 3. Find 16 $\frac{2}{3}$ per cent. of \$1,684.20. 4. What will be a patrolman's pay for June, 1912, if he was off duty $6\frac{3}{4}$ days, and his salary is \$2.75 a day? 5. Divide 2355780 by 284.

City Information—Weight 1.

1. Name the principal streets crossing Broad street between 1200 North and 1900 North. 2. Name the principal streets crossing Broad street between 200 South and 900 South. 3. Name: 1, The Assistant Director of Public Safety; 2, the Superintendent of Police; 3, the captain of your division and state the number of your district; 4, the captain of detectives; 5, the Director of Public Works. 4. Name the police boats and give their location. 5. Give the location of the following hospitals: 1, Presbyterian Hospital; 2, Episcopal Hospital; 3, Stetson Hospital; 4, Poly-

clinic Hospital; 5, German Hospital. 6. How many patrolmen has Philadelphia? 7. In what section of the City are the following police districts: 1, Eighteenth; 2, Fourteenth; 3, Twenty-ninth; 4, Twenty-seventh; 5, Thirty-seventh?

Knowledge of Duties—Weight 3.

1. Mention the books and records usually kept in a police station. 2. Where are the following licenses obtainable: 1, for coach—2 horse; 2, elevator operator; 3, marriage license; 4, for retail dealers; 5, auctioneers? 3. Mention the different grades of officers in the police service from patrolman up. 4. Tell what steps are necessary to become a member of the police force. 5. What is meant by "quarantine duty" and tell what quarantine is for? 6. What is the proper method of taking a dying declaration? 7. Write out in full the instructions you would give a new patrolman in the use of a fire alarm box and the mode of giving the alarm. 8. What are the duties of a street sergeant? What are the duties of a house sergeant? What are the duties of a patrol sergeant?

Laws and Ordinances—Weight 2.5.

1. Mention five offenses that are not bailable by a Magistrate. 2. What is meant by the term "replevin"? 3. What is meant by the term "accessory after the fact"? 4. Summarize the provisions of City ordinances relating to gunpowder. 5. What are the principal differences between a Magistrate's Court and a Court of Common Pleas? 6. What would be your action if you found a number of persons in a house smoking opium? 7. Under what conditions should an intoxicated person be arrested?

Report Writing—Weight 1.5.

Suppose as Sergeant you had charge of the patrolmen in a section of your police district, and that one night last

week a crowd of men created a serious disturbance in the street and was beyond the control of the patrolman of that beat. Write a full report to the Lieutenant of your district, giving all the facts and your action in the case. Sign the report "John Doe."

Spelling—Weight .5.

Write the correct form for each word below: 1, telephone; 2, recommend; 3, immediatly; 4, buisness; 5, original; 6, evedence; 7, seperate; 8, chief; 9, guardeen; 10, elligible; 11, exerciseing; 12, abundant; 13, patrollmen; 14, exibition; 15, anser; 16. reciept; 17, penelty; 18, mantain; 19, volumn; 20, penitentiary.

LIEUTENANT OF POLICE.

\$1,800 per annum, July 16, 1912.

Experience Sheet—Weight 2.

1. For what position do you apply? 2. What is your age? 3. Where and during what years did you receive your education? Give dates, names of schools, and course of study. 4. When did you first enter the police service of Philadelphia? Has your service been continuous? What length of time were you out of the service? Tell when and why. 5. Name the positions you have filled in the police service, giving the exact dates and time spent in each. 6. Have you ever been suspended? If so, give facts relating thereto. 7. State any important arrest which you have made, and any important incident with which you, as an employee of the Bureau of Police, have been connected, and what services you performed in each case.

Administration—Weight 2.

1. Outline the principal duties of a police lieutenant. 2. Upon taking charge of a police station house and district

what are some of the first things you would do? 3. How would you satisfy yourself that all your subordinates were carrying out your orders and doing their full duty? 4. What do you understand by "cleaning up your district," and tell how you would go about it in a case supposed? 5. How would you proceed to maintain and perfect the discipline of your entire force? 6. Give in detail the duty of a lieutenant as regards a prisoner from the time he is brought into the station house until the case is closed. 7. State what records are kept at a police station. 8. Your platoon is marching company front, and you desire, without halting, to form a column of fours to the right and front. Give the proper commands for this movement. 9. Give the proper commands to restore the platoon formation from the column of fours while continuing the march in the same direction. 10. In case a number of newly appointed patrolmen were added to your district, state in detail what you would do with them.

Arithmetic—Weight .5.

1. Add: 785439, 684567, 654968, 29765, 384973, and also find the sum of 395868, 29684, 928659, 287694, 384974, 37648, and then find the difference between the two. 2. A man had \$1,250; he spent $\frac{2}{5}$ of it for a horse; $\frac{2}{3}$ of the remainder for a carriage; $\frac{7}{10}$ of the remainder for a sleigh. How much had he left? 3. What is the net amount of a bill for \$7,685.65, subject to a discount of 10 per cent. and 5 per cent? 4. The first year in business a man gained \$2,384.68; the second \$2,897.47; and the third year he lost \$1,765.53. His expenses each year averaged \$978.46; how much had he gained or lost at the end of three years? 5. Divide \$785 among three men so that the first will have \$185 more than each of the others.

City Information—Weight 1.

1. How many police captains are there? 2. How many police divisions are there? 3. How many police lieutenants in the Bureau of Police? 4. How many police districts are there? 5. Which police districts are included in each police division? 6. Give the location of the district police stations in the following districts: 1, Third district; 2, Sixth district; 3, Thirty-eighth district; 4, Eighteenth district; 5, Thirty-first district. 7. Name the lieutenants in charge of the following districts: 1, Fourth district; 2, Twenty-eighth district; 3, Eleventh district; 4, Seventeenth district; 5, Twenty-ninth district; 6, Fifteenth district; 7, Thirteenth district; 8, Thirty-sixth district; 9, Twenty-second district; 10, Twenty-first district. 8. In which police districts are the following hospitals: 1, Philadelphia General Hospital; 2, Medico-Chirurgical Hospital; 3, Jefferson Hospital; 4, Samaritan Hospital; 5, St. Joseph's Hospital? 9. What wards are covered by the following police districts: 1, First district; 2, Eleventh district; 3, Sixteenth district; 4, Thirty-first district; 5, Thirty-fourth district? 10. Where is: 1, Angora; 2, Manayunk; 3, Nicetown; 4, Torresdale; 5, Haddington?

Laws and Ordinances—Weight 2.

1. An officer makes an arrest. Does that end his duty in the case? If not, what further should he do? 2. What is required for an officer who finds cases of the following: (a) Concert saloons or dance houses to which minors are admitted when unaccompanied by their parents? (b) Persons riding bicycles without a bell attached, in any street? (c) Persons riding bicycles in any street? (d) Persons casting carcasses into the Delaware river? (e) Any person offering for sale spirituous or malt liquors without having a license from the court? 3. What is meant by: (a) Larceny? (b) Burglary? (c) Manslaughter? (d)

Breach of ordinance? (c) Bail? 4. Under what conditions may an officer forcibly enter a private house? 5. Is there any difference between a "summons" and a "warrant"? If so, state what it is. 6. Under what conditions is an officer justified in striking a person whom he is trying to arrest? 7. State what you understand by "habeas corpus." 8. What are the provisions of ordinances regarding the operation of automobiles within the city limits? 9. Concerning warrants state: (a) By whom they are issued; (b) the different kinds; (c) within what time after their issue they must be served. 10. A man is walking along the street with a \$20 bill in his hand. The bill is snatched out of his hand by another person, without using violence. What would you do in this case, and what charge would you lodge against the offender?

Penmanship—Weight .5.

This subject will be graded on all the writing in the examination.

Report Writing—Weight 1.5.

During the automobile races in Fairmount Park you were the ranking officer in charge of a section of the course. In that section a serious accident occurred to one of the machines, and a number of persons in the crowd of spectators received serious injuries. Write a detailed report of not more than 200 words to the Superintendent of Police, giving full particulars of the occurrence and your official action. Sign the report "John Doe."

Spelling—Weight .5.

Write the correct form of each of the following words: 1, Milage; 2, obedience; 3, priveleges; 4, disabillity; 5, equivelent; 6, retirment; 7, afor said; 8, supervision; 9, prothonotary; 10, nuisance; 11, concreete; 12, minnimum; 13, suppliment; 14, temperture; 15, opininion; 16, customery; 17, passanger; 18, carachter; 19, affidavit; 20, masonery.

SKILLED LABOR SERVICE

Experience Sheet for Skilled Labor Service.

1. Give the names and addresses of two reputable citizens who will vouch for the truth of your answers on this paper. 2. What is your age? 3. What was the highest reader you studied in school? 4. How far did you go in arithmetic? 5. How is your trade or chief occupation? 6. How long did you follow this occupation? 7. What are you doing now? Who is your employer? How long have you worked for him? What wages do you receive? 8. Name three of your principal employers. Give their addresses. 9. Tell what class of work you did for the above and how long you were in their employ. 10. Tell what wages you received from each and why you left.

ASPHALT RAKER,

DEPARTMENT PUBLIC WORKS, BUREAU OF HIGHWAYS.

\$2.50 per day, September 28, 1912.

Experience—Weight 5.

(See above.)

Practical Questions—Weight 3.

1. In what condition is asphalt when it is brought to the street where it is to be laid? 2. What would be the result after rolling, if the raker did not spread the asphalt properly? 3. What special care must be taken when they haul the asphalt in cold weather? 4. State what is done with the asphalt from the time it is dumped on street until it is ready for rolling. 5. What is the effect of stepping on the asphalt after it is raked and before it is rolled?

Personal and Physical Fitness—Weight 2.

1. What is your age? Married? Children? 2. To what extent do you use liquor or cigarettes? 3. Have you ever been arrested? 4. Sanitary condition of person. 5. Physical fitness.

ATTENDANT, PUBLIC AQUARIUM, MAYOR'S OFFICE.

As per ordinance, March 13, 1912.

(Same as SKILLED LABORER. See page 646.)

BAKER, DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$52 per month and as per Ordinance, July 18, 1912.

Experience and Personal Fitness—Weight 5.

1. What is your age? Married? Children? 2. Schooling? 3. Where do you live? How long have you lived in the City? 4. To what extent do you use liquor? Cigarettes? 5. Have you ever been charged with any crime or misdemeanor? 6. In general, what is your occupation? 7. How long have you followed it? 8. What are you doing now? 9. Who is your employer? How long have you been so employed? What salary do you receive? 10. What was your previous employment? Who was your employer? Why did you leave? 11. Give a list of the other positions you have held, with particulars as to employers, salaries, and kind of work, going back five years, at least. 12. Have you any chronic diseases, or physical infirmities? Hearing? Sight? Limbs? Lungs? 13. Special training? 14. Personal fitness. Sanitary condition of person.

Practical Questions (Oral)—Weight 5.

1. What qualifications should a good baker possess?
2. Explain in detail the complete process in making a

loaf of bread. 3. (a) Name five different materials used as the base for bread. (b) Which do you consider has the highest food value? (c) Why? 4. Do you use alum in baking? Why? 5. (a) How do you make a sponge cake? (b) Pie crust? (c) Yeast? (d) Corn muffins?

BAKER, ANY DEPARTMENT.

\$624 per annum, December 18, 1912.

Practical Test—Weight 10.

Practical test will consist in the actual baking of bread and rolls.

BLACKSMITH, ANY DEPARTMENT.

As per Ordinance, July 26, 1912.

Experience—Weight 3.

(Same as BAKER, see page 595.)

Practical Questions—Weight 7.

1. Suppose you had to weld two pieces of 1-inch round iron end to end, how would you do it? 2. How would you temper a steel point? 3. (a) What qualities should good forge coal possess? (b) Why is sulphur in forge coal not desirable? 4. How would you correct "interference" by a horse? 5. Suppose the tire on a wheel is loose, how would you tighten it? 6. Why is compound used for welding steel?

BLACKSMITH'S HELPER, ANY DEPARTMENT.

As per Ordinance, March 13, 1912.

(Same as for SKILLED LABORER. See page 646.)

BLUEPRINTER,
DIRECTOR'S OFFICE, DEPARTMENT OF PUBLIC WORKS.
\$600 per annum, October 16, 1912.

Experience—Weight 4.

Any false statement made by the applicant in answering these questions will be regarded as good cause for excluding him from the eligible list, or for removal or discharge during probation or thereafter. 1. What is your age? 2. (a) In what grade were you when you left the grammar school? (b) What high school did you attend? How long? What course? (c) What technical training have you had as apprentice, or in business school, or in college, or in technical school? 3. In general, what is your occupation? How long have you followed it? 4. When, where, for whom, and how long have you worked at this occupation, and what wages or salaries have you received in each case? 5. From what positions have you been discharged for cause, and what were the causes? 6. State exactly and in detail the kind of work you were doing in each of the leading positions you have filled in the past five years. 7. Give the particulars about any special work you have done in addition to the above, which tends to qualify you for the position you are now seeking.

Practical Questions—Weight 6.

1. How is blueprint paper made? Describe fully the manufacture, giving chemicals used, method of coating, etc. 2. How are blue prints made? 3. How may an underexposed print be improved? 4. How may an overexposed print be improved? 5. How can the time of exposure be accelerated? 6. What is Vandyke paper? How is it used? Give the complete description of the process from the time the paper is put in the printing

frame till it appears as a finished print. 7. What is black-line print paper? After exposure, how is it treated? 8. How may alterations be made to a blue print?

BOILERMAKER, ANY DEPARTMENT.

As per Ordinance, September 28, 1912.

Experience—Weight 5.

(See page 594.)

Practical Questions—Weight 3.

1. Describe each of the following joints: Single-riveted lap, double-riveted lap, butt joint with double cover. 2. Given two boiler plates to be single-lap riveted. State in detail the various steps in the work. 3. How would you replace a tube in a locomotive boiler? Is a portion of the old tube ever used? If so, how? 4. How is the boiler shell strengthened around the edges of a manhole? 5. How is a screw stay bolt placed in a locomotive boiler? What other kind of stay bolt is used in boiler work?

Personal and Physical Fitness—Weight 2.

(See page 595.)

BOILERMAKER'S HELPER, ANY DEPARTMENT.

As per Ordinance, March 13, 1912.

(Same as for SKILLED LABORER. See page 646.)

BRICKLAYER, ANY DEPARTMENT.

As per Ordinance, October 5, 1912.

Experience—Weight 5.

(See page 594.)

Personal and Physical Fitness—Weight 2.

(See page 595.)

Practical Questions—Weight 3.

1. What is bonding in brick work? Explain how it would be done in a 13-inch wall. 2. What forms of arches are used in ordinary work? What is the centering of an arch? 3. What is the meaning of each of the following: Stretchers, headers, closers, pointing? 4. What precautions must be taken in building a wall in cold weather? How should the wall be left at the end of a day's work? 5. State in detail how lime mortar is made. What is cement mortar? What is grout?

BRICKLAYER'S HELPER.

As per Ordinance, March 13, 1912.

(Same as for SKILLED LABORER. See page 646.)

BRICKLAYER'S HELPER (ORAL).

As per Ordinance, October 5, 1912.

Experience—Weight 3.

(See page 594.)

Personal and Physical Fitness—Weight 5.

(See page 595.)

Practical Questions—Weight 2.

1. Name and give the use of three bricklayer's tools. 2. What is mortar made of? 3. What kinds of bricks are used in the building of ordinary dwelling houses? 4. How does a bricklayer keep his wall plumb? 5. How many bricks can be carried in an ordinary hod? How are bricks laid in a pavement?

BUTCHER, DEPARTMENT OF HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$900 per annum, July 8, 1912.

Experience—Weight 4.

(See page 594.)

Practical Questions—Weight 6.

1. Name the principal tools a butcher uses and tell what each is used for. 2. How would you kill a steer? A calf? A sheep? A pig? 3. How would you cut up a carcass of beef? 4. What different kinds of steak can you cut from a beef, and from what portion do you cut them? 5. What quantity of meat should a fat steer of 1,500 pounds live weight yield? 6. How many pounds of veal chops can be cut from a calf of 180 pounds live weight? 7. How would you trim and cure ham? 8. What is the best way of making sausage and scrapple? 9. What would you do to keep your shop clean? 10. Name some evidence of different diseases of cows, sheep and hogs.

CARPENTER, ANY DEPARTMENT.

As per Ordinance, October 19, 1912.

Experience—Weight 5.

(See page 594.)

Practical Questions—Weight 4.

1. The actual making of mortise and tenon joint in the shop. 2. For what purposes are the following woods used in carpentry: (a) Yellow pine? (b) Hemlock? (c) Poplar? (d) Chestnut? (e) Oak? 3. Name the parts of a quarter pace, open string stairway, 4 feet wide, complete, built against the wall. 4. Name the different pieces used in building a hip roof on an L-shape building; main building, 20-foot front, 30 feet deep; rear building, 12 feet wide and 16 feet deep. Make a plan



Applicants taking examination for position of Carpenter. Held at Philadelphia Trades School, October 19, 1912.

of this roof, showing two of each type of rafter. 5. How would you brace the front of one of a row of dwellings in order to remove the first floor front wall? 6. Make out the stock list for a piece of panel work 4 feet long by 18 inches high, which contains four panels of $\frac{1}{2}$ -inch stuff, mortise and tenon corners, muntins tongued into rails $1\frac{1}{2}$ inches. All rails, stiles and muntins are to be 3 inches wide by $\frac{7}{8}$ inches, and the panels are to be set into grooves $\frac{1}{2}$ -inch all around. Make a sketch, marking the different pieces.

Personal Fitness—Weight 1.

(See page 595.)

CARPENTER'S HELPER, ANY DEPARTMENT.

As per Ordinance March 13, 1912.

(Same as for SKILLED LABORER. See page 646.)

CAULKER (ORAL), DEPARTMENT OF PUBLIC WORKS,

BUREAU OF WATER.

\$3 per day, October 14, 1912.

Experience—Weight 3.

(See page 594.)

Personal Fitness—Weight 2.

(See page 595.)

Practical Test—Weight 5.

Alignment, blocking, cleaning. Depth, regularity, number of pieces, condition. Clay, condition, pouring, waste. Removing clay, removing gate, caulking. General workmanship. What space would you allow between pipes in sleeving? How would you make a joint when a small amount of water is running through the pipe?

CHAUFFEUR, ANY DEPARTMENT.

\$900—\$1,200 per annum, February 26, 1912.

Experience—Weight 2.5.

(See page 594.)

City Information—Weight 1.5.

1. What is the shortest and smoothest route for an automobile to go from City Hall to Queen Lane Filtration Plant? 2. Under what circumstances would you run your car on a granite paved street in preference to an asphalt paved street? 3. State the rules of the road for chauffeurs. 4. State the local traffic regulations with regard to motor cars. 5. Name the steam railroads running into Philadelphia, and locate their principal passenger stations. 6. Give a statement of the laws governing the speed of automobiles and the lights to be carried in Philadelphia. 7. Name four avenues running diagonally through different sections of the city. 8. What direction do the trolley cars run on South street, Race street, Eleventh street, and Fifteenth street? 9. Name and locate four hospitals.

Practical Questions—Weight 6.

1. What qualifications should a good chauffeur possess? 2. How is the operation of an automobile controlled on the roadway? 3. Explain the use of the foot pedals. 4. Name the four strokes comprising the working cycle of the four-cycle gas engine, and describe what takes place during each stroke. 5. What two methods are used to cool the cylinders sufficiently for satisfactory working? 6. (a) What function does a carburetor perform? (b) Name two common types of carburetors. 7. What is a float feed, and of what use is it? 8. Name two ignition systems in general use. 9. What important adjustments should be made before starting the engine of an automobile? 10. (a) How should tires be cared for to pro-

long their usefulness? (b) In driving a car, what would you do in order to secure large tire mileage? Include, in your answer, any steps you would take to prolong the life of a shoe in service. 11. What is the proper method of handling a car to make a gradual stop? 12. How should the speed of a car be controlled on a long down-grade? 13. What possible trouble might be experienced as a result of gritty grease in the timer? 14. (a) You are assigned to drive a car that has had too much oil. How would you know this, and what work would you do yourself to place the car in condition? (b) How should the lubricating system of an automobile be cleaned? (c) How would you know that a bearing in your motor was not getting oil? 15. What causes smoking at the exhaust and how would you prevent it? 16. How often would you expect to grind in valves on a poppet valve motor, and how would you do it? 17. In going over a car, prior to a 100-mile run about the City, what would you inspect? 18. In starting a car and frequently in climbing hills, a knocking is perceptible in the motor. What causes this and how would you prevent it? 19. What causes skidding, and how would you prevent it?

CHAUFFEUR, DEPARTMENT OF HEALTH AND CHARITIES,
BUREAU OF HEALTH.

\$900 to less than \$1,200 per annum, July 19, 1912.

Experience—Weight 3.

(See page 594.)

City Information—Weight 2.

1. What route would you take in going from Blockley to the Episcopal Hospital? 2. Locate the following buildings and places: (a) Widener Home for Crippled Children. (b) Logan Square. (c) Eastern Penitentiary. (e) Girard College. 3. What would be the smoothest

route from the B. & O. Station (Twenty-fourth and Chestnut streets) to Shibe Park? 4. How would you go from City Hall to the Wentz Farm? 5. About how long would you require to go from City Hall to Torresdale Filter Plant? Presbyterian Hospital? 6. Indicate the direction and number of squares of the following streets from City Hall: (a) Girard avenue. (b) Cayuga street. (c) Jackson street. (d) Lehigh avenue.

Practical Questions—Weight 5.

1. Supposing, on a rainy day, you were running a car rapidly east on Diamond street, between Fifteenth and Broad streets, and another car is running south on Broad street. You reach the intersection of the streets and there is danger of a collision. How would you avoid an accident? 2. What extra tools and accessories would you carry with your car? 3. (a) What is the cause of the formation of a carbon coating in your cylinders? (b) Tell how you would remedy this difficulty and also clean the cylinders. 4. What do you understand by high, low and intermediate gears? Under what conditions would you use each? Under what conditions would you change from one to another? 5. In case you are unable to start your engine, state how you would systematically investigate the trouble. 6. Supposing, in going down hill, the brake and emergency refuse to work, what would you do? 7. If you were running cautiously and according to regulations and struck a child, what would you do? 8. What are the State laws concerning: (a) intoxicated persons running automobiles? (b) Lighting? (c) Use of horn? (d) Caution signs? (e) Passing street car discharging passengers? (f) Tag (size of letters, exposure both day and night)? (g) Speed limit? and (h) passing vehicles going in the same direction? In opposite directions?

CLIMBER,
DEPARTMENT PUBLIC SAFETY, ELECTRICAL BUREAU.

\$3 per day, December 7, 1912.

Experience—Weight 2.

(See page 594.)

Physical Test—Weight 3.

Practical Questions—Weight 5.

1. Give the names of four tools a climber would use, and tell the use of each. 2. Explain in detail the method of splicing two insulated copper wires. What would you do to give the job a good finish? 3. In running a pole line, are there any differences in planting corner poles and those in between corners? 4. Make the sketch of the top of a pole carrying sixteen wires, and give the names of all the parts, and tell how they are attached. 5. What are the dangers to which a climber is subject, and what precautions should be taken against them? 6. Explain in detail how a firm alarm box is connected to the overhead wires.

COAL PASSER,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.

As per Ordinance, July 9, 1912.

Experience—Weight 1.

(See page 594.)

Physical Ability—Weight 5.

Practical Questions—Weight 4.

(a) What articles do you require in your work? (b) What are the duties of a coal passer? (c) Name three sizes of coal. (d) If a chute from a two-ton coal wagon from which you were taking coal should get out of order, what would you do? (e) Where are two important pumping stations? (f) How many pounds in a ton of coal?

COOK AND ASSISTANT COOK, DEPARTMENT PUBLIC
HEALTH AND CHARITIES, BUREAU OF CHARITIES.

\$500 as per Ordinance, March 1, 1912.

Experience—Weight 4.

(See page 594.)

Apparent Cleanliness—Weight 1.

Practical Questions—Weight 5.

1. Give a plan for conducting a large kitchen with twelve employees. 2. Explain how you would take care of a cooking range. 3. What care should be taken of fresh meat? 4. Explain how you would cut up a carcass of mutton, so as to have as little waste as possible. How would you utilize the scraps that were left over? 5. Give a recipe for the preparation of egg plant, stewed onions, Boston baked beans, meat pies. 6. State some of the ways of preparing potatoes for the table. 7. Give directions for roasting beef, lamb, pork. 8. Describe how you would prepare a wholesome, palatable and nutritious meat stew for 1,000 people. 9. Name four inexpensive desserts and give recipes for them. 10. What precautions must be observed in the use of canned goods?

COOK AND ASSISTANT COOK, DEPARTMENT OF PUBLIC
HEALTH AND CHARITIES, BUREAU OF CHARITIES.

\$500—\$800 per annum and as per Ordinance,

July 27, 1912.

Experience—Weight 5.

(See page 594.)

Practical Questions—Weight 5.

1. (a) What should be the first care of a good cook with regard to her kitchen, utensils and person? (b) What evil may result from lack of care as to the con-

dition and cleanliness of food? 2. How can you tell when the following are good and fresh: (a) fish; (b) poultry; (c) beef; (d) vegetables? 3. How long should it take to properly cook: (a) A 25-pound roast of beef; (b) a 15-pound turkey; (c) green corn; (d) oatmeal. 4. State how you would prepare for the table: (a) mayonnaise dressing; (b) salt mackerel; (c) baked beans; (d) beefsteak. 5. What is meant by: (a) A slow oven; (b) a crown roast; (c) basting; (d) a stock pot?

COOK AND ASSISTANT COOK,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$420—\$500 per annum, December 18, 1912.

Practical Test—Weight 10.

Practical test will consist in the preparation and cooking of a number of articles of food in common use.

DAIRYMAN,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$50 per month, July 9, 1912.

Experience—Weight 4.

(See page 595.)

Practical Questions—Weight 6.

1. How would you take care of milk cows? 2. In milking a cow, what would you do to make sure of getting good, clean milk? 3. When is the milk of a cow not fit for use? What should be done with it? 4. What are the three most important things to do in taking care of a cow stable? 5. After you have finished milking a cow, what are the first two things to do with the milk?

6. What is the best way of keeping milk wholesome?
7. How would you take care of buckets, cans and bottles used for milk?
8. What is the best way of removing cream from milk? When should this be done?
9. How would you make good butter?
10. What other things can you make out of milk, and how?

DAIRYMAN,
DEPARTMENT PUBLIC HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$600 per annum, December 7, 1912.

Experience—Weight 5.

(See page 594.)

Practical Questions on Dairy Work—Weight 5.

1. Explain in detail the steps taken in handling milk from the time of milking until it is ready for use.
2. Explain the operation of making butter. Give the names of all utensils used.
3. Name six important things which enter into the proper caretaking of milk cows.
4. What is cream? When and how is it obtained?
5. What are the sanitary and hygienic conditions which must exist in a well-regulated farm and dairy?

DRILLER,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.

\$3 per day, July 24, 1912.

Experience—Weight 4.

(See page 594.)

Practical Questions—Weight 6.

1. Describe in detail the method of drilling a hole in a 12-inch water pipe.
2. What materials and tools would you use in caulking a cast-iron pipe? A steel pipe?
3. After a hole has been drilled, how would you insert the

ferrule? 4. State in detail the difference in methods of drilling cast-iron and steel pipe. 5. Of what use is oakum in caulking pipes? What is a gasket?

DRIVER, ANY DEPARTMENT.

As per Ordinance, July 29, 1912.

Experience—Weight 3.

(See page 594.)

Practical Questions (Oral)—Weight 7.

1. You are making a trip on a hot day with a double team. What precautions would you take in watering your horses? 2. If one of your horses in a double team fell down, what would you do to get him on his feet? 3. What care should be exercised in driving a team of horses down hill? 4. What would you consider a good load for an average horse on a good street? 5. Mention four rules to be observed in driving a horse through the streets. 6. In case you were driving an ambulance and should run over a child, what would be your course of action immediately following the accident? 7. In case your horse went lame on the road, what would you do? 8. If, while on the road, your horse became sick, what would you do? 9. What rules should be observed in harnessing and hitching a horse? 10. What care should be taken in feeding a horse while on a long trip?

DYNAMOMAN, DEPARTMENT PUBLIC SAFETY,
ELECTRICAL BUREAU.

\$1,200 per annum, July 16, 1912.

Training and Experience—Weight 3.

(See page 594.)

Practical Questions—Weight 7.

1. Draw a diagram of a horizontal tubular boiler, showing the essential parts. 2. What are the methods of intro-

ducing water into the boiler? Explain the working of each method. 3. What is meant by a condensing engine and a non-condensing engine? 4. What is the purpose of lubrication? What materials are used for lubrication? Specify where and under what conditions each can be used to best advantage. 5. What are the different types of dynamos? What kind of current do they produce, and what are the essential differences in construction between them? 6. What is a commutator on a dynamo? Explain in detail how it is constructed? How can a commutator be constructed in order to reduce the tendency to spark? 7. How does a dynamo produce electric current? 8. What are the different types of field winding? 9. Give some of the causes of sparking in the brushes. 10. Outline your methods of keeping a dynamo in the best possible running condition.

ELECTRICIAN, ANY DEPARTMENT.

\$3 per day, or as per Ordinance, March 7, 1912.

Supplemental Experience Sheet—Weight 2.

1. State fully and in detail all the practical experience you have had as an electrician or wireman, or in any other occupation of a similar character. State: (a) When, giving dates. (b) Where. (c) By whom you were employed. (d) The salary or compensation received. (e) The specific nature of your duties in each case. 2. State any additional facts which may tend to show your fitness for the position for which you have applied.

Practical Questions—Weight 6.

1. Describe the construction of an incandescent lamp. 2. When voltage higher than normal is used in an incandescent lamp circuit, what is the effect upon: (a) The brilliancy? (b) The life? (c) The efficiency? 3. Draw a diagram showing connection of the different parts of

a telephone set. 4. State clearly and concisely the difference between the common-battery and local-battery systems of telephone operation. 5. What is the working range of voltage of a storage cell? 6. How can you tell when a storage battery is fully charged? 7. How can you tell that a storage battery needs recharging? 8. Describe the construction of a voltmeter, and explain fully why it measures the voltage when placed in an electric circuit. 9. Name the causes of commutator sparking in direct-current motors. 10. What is a compound-wound generator? Draw diagram. 11. State the purpose of a starting rheostat. 12. What are the principal advantages and disadvantages of using tungsten incandescent lamps in buildings? 13. Make drawings showing how you would wire a circuit containing five incandescent lamps, starting from a branch block and fulfilling the following conditions: Two lamps are controlled by either of two switches; the other three form a cluster and are controlled by a wall switch, two being also controlled by a pendant switch and the other socket to be connected by means of a plug and cord to a desk lamp, and to be independent of the pendant switch. 14. What precautions are necessary in leading wires into a building from a pole? 15. Discuss the relative value of wooden molding, porcelain knobs and cleats, and metallic conduit for inside work. 16. In testing the insulation of an electric wiring installation in a public building, the voltmeter reading was 2.75 volts, and the voltage applied was 220. What is the resistance of the insulation if the resistance of the voltmeter is 20,000 ohms?

Report Writing—Weight 2.

Write a letter to the Chief of the Electrical Bureau, reporting an investigation you made of a complaint con-

cerning the lamps in one of the offices of City Hall. Assume the facts complained of, and state the conditions as you found them, and make the recommendations necessary to put everything in perfect working order. Do not sign your name; use your examination number instead.

ELEVATOR OPERATOR,
DEPARTMENT PUBLIC SAFETY, ELECTRICAL BUREAU.
\$2.75 per day, July 17, 1912.

Experience and Physical Qualifications—Weight 3.
(See page 594.)

Practical Questions—Weight 7.

1. What are some qualifications that an elevator operator should have? 2. What should be the duty of an operator towards women and children passengers? 3. If your car should become disabled between two floors and should stop, what would you do? 4. What should govern the number of people carried at any one time in a car? 5. If a passenger should abuse you because of some imagined insult or injury, what would you do? 6. How would you go about cleaning the overhead work of an elevator? 7. What is an "air cushion," a "safety clutch," "bumper springs"? 8. (a) Mention a type of safety clutch that is undesirable for passenger elevators. (b) How should a desirable safety clutch for passenger elevators act?

ELEVATOR STARTER,
DEPARTMENT PUBLIC SAFETY, ELECTRICAL BUREAU.
\$3 per day, July 22, 1912.

Experience—Weight 2.

1. What is your age? 2. How long have you been an operator in City Hall? Have you ever been disciplined

for carelessness, neglect or shirking your work? 3. How many years' experience did you have before entering the employ of the City? Where?

Personal Appearance—Weight 2.5.

Practical Questions—Weight 4.

1. State in order of importance the duties of a starter.
2. State how you would direct the running of the elevators at the southwest corner of City Hall in order to give prompt and efficient service? Would there be a variation of your method for different parts of the day?
3. An old and feeble person enters the northeast corner of City Hall. How would you direct him to the Civil Service Examination Rooms? To the Superintendent of Schools?
4. Where are the following offices located: Director of Public Works? Chief Bureau of Elevator Inspection? Court of Common Pleas No. 2? Recorder of Deeds? Director of Public Health and Charities?

Reading Addresses—Weight 1.5.

(Selected from a City Directory.)

FARMER, DEPARTMENT OF HEALTH AND CHARITIES,
BUREAU OF CHARITIES.

\$1,200 per annum, March 14, 1912.

Experience—Weight 2.

(See page 594.)

Practical Questions—Weight 6.

1. Outline all the duties that you may be called upon to perform as farmer for a large institution.
2. Given a farm of two hundred acres in size, state how much help you would require, how you would use your help, what

implements you would consider necessary for such a farm, and what buildings you would consider necessary. 3. (a) What do you understand by the rotation of crops? (b) What is a nurse crop? (c) When should it be used? 4. (a) What is a silo? (b) What are the contents called? (c) How are they prepared? 5. In what stage of its growth should grasses be cut for hay? 6. What do you consider the best of all fertilizers? Give reason for your answer. 7. Describe the method of inoculation of the soil for growing alfalfa. 8. What is the effect on the soil of plowing under crimson clover? 9. Give the best method of applying lime to soils. 10. Discuss the relative advantages and disadvantages of high-wheeled and low-wheeled wagons. 11. (a) What are the relative advantages of metal, paper and shingles as roofing materials for farm buildings? (b) Explain when each may be used to best advantage. 12. Explain fully how you would plant, cultivate, harvest and store for winter use any of the following crops: Onions from seed, winter cabbage, sweet potatoes, celery. 13. What would you suggest to follow a corn crop? 14. What do you consider the most suitable soil for potatoes? 15. Give a successful four-year rotation for potatoes. 16. What are hot-beds used for? 17. Name some insecticides that are used in gardening. 18. How many pounds of grain for one day are necessary to nourish a cow in a full flow of milk? 19. Describe how you would select and prepare the seed for planting potatoes to get the best results. 20. Select three of the following-named insects and tell what injury each of them does to the products of the farm, and describe how the injury may be decreased or prevented: San Jose scale, codling moth, plant lice, potato bug, cabbage worm.

Report Writing—Weight 2.

Write a report to the Superintendent, Philadelphia Hospital, stating the present condition of the various buildings on the property at Byberry, and suggesting the improvements that you deem necessary. Assume any facts you like, to make this a comprehensive report of not less than 150 words. Do not sign your name to this report; use your examination number instead.

FARMER AND ASSISTANT FARMER, DEPARTMENT OF
HEALTH AND CHARITIES, BUREAU OF CHARITIES.
As per Ordinance, \$35—\$50 per month, July 13, 1912.

Training and Experience—Weight 3.

(See page 594.)

Physical Qualifications—Weight 5.

(See page 595.)

Practical Questions—Weight 2.

1. What attention would you give to a horse after returning from a day's hard work in the field? 2. What precaution would you observe in hitching a horse? 3. What rules would you follow with respect to implements not in use? 4. Under what condition would you permit cattle to remain in a clover pasture? 5. What care must be taken in cultivating corn, and how frequently should this operation be repeated? 6. How would you get rid of a growth of weeds or thistle? 7. In what months are the following planted: Wheat, oats, potatoes and corn? 8. How should a field be prepared for planting wheat? 9. What rules would you observe previous to and during milking?

FARMER AND ASSISTANT FARMER, DEPARTMENT OF
HEALTH AND CHARITIES, BUREAU OF CHARITIES.

\$35—\$50 per month, December 7, 1912.

Personal and Physical Fitness—Weight 6.

(See page 594.)

Practical Questions—Weight 4.

1. In what months are the following planted: Rye? Potatoes? Corn? Turnips? 2. How should a field be prepared for planting corn? What special care must be taken in cultivating this field? 3. Where horses are used daily in the field, explain in detail the care that must be taken of them. 4. Give the names and uses of four farm implements. What implements need special care when not in use? 5. What general means would you take to get rid of weeds or thistle?

FILTER ATTENDANT, DEPARTMENT PUBLIC WORKS,
BUREAU OF WATER.

As per Ordinance, March 13, 1912.

(Same as for SKILLED LABORER, see page 646.)

FILTER ATTENDANT, DEPARTMENT PUBLIC WORKS,
BUREAU OF WATER.

\$800 per annum, July 31, 1912.

Personal and Physical Fitness—Weight 3.

(See page 594.)

Practical Questions—Weight 7.

1. Why is it necessary to filter water? 2. (a) How are samples of water for analysis obtained? (b) What care should be exercised in collecting the water? (c) Why is it necessary to take samples? 3. (a) How can you tell whether a filter is doing satisfactory work? (b)

How would increasing the length of time of runs and lessening the number of cleanings be likely to affect the filtered water? 4. What is a fair average in gallons per acre per 24 hours for sand filter? How is the water measured? 5. (a) What is a sedimentation basin? (b) What is a preliminary filter? (c) What is a final filter? 6. (a) Explain the difference between scraping and ejecting, and the Brooklyn method of cleaning final filters? (b) How fast should water be supplied for washing by the Brooklyn method?

FIREMAN, ANY DEPARTMENT.

Less than \$600 per annum, March 14, 1912.

Experience—Weight 4.

(See page 594.)

Practical Questions—Weight 6.

1. Describe the whole operation of starting a fire under a boiler. 2. How often should fires be cleaned and raked in a day? 3. How do you know when a fire needs to be cleaned? 4. What causes the water in a boiler to foam? 5. Where is the blow-off cock on a horizontal return tubular boiler?

FIREMAN, ANY DEPARTMENT.

\$600 to less than \$900 per annum, July 27, 1912.

Experience—Weight 3.

(See page 594.)

Practical Questions—Weight 7.

1. With a boiler in continuous service, how often would you clean the fire? Describe method. 2. How do you fire soft coal? Hard coal? 3. What is the use of gauge cocks? Of gauge glasses? What care do they need? 4. What would you do in case water in the boiler drops below

the gauge glass? 5. How would you keep a safety valve in working order? How would you prevent long-continued blowing of a safety valve? 6. How would you prevent black smoke from hard coal? From soft coal?

FIREMAN (ORAL), ANY DEPARTMENT.

Less than \$600 per annum, October 25, 1912.

Experience—Weight 5.

(See page 594.)

Personal Fitness—Weight 2.

(See page 595.)

Practical Questions—Weight 3.

1. Name the parts of a boiler requiring the constant attention of the fireman while the boiler is under steam.
2. Explain the operation of cleaning and raking a boiler fire.
3. Why is it necessary to clean boilers? Explain the operation.
4. What would you do if the water in the boiler became low and there appeared to be something wrong with the supply?
5. What is a feed-water heater and how does it work?

FIREMAN ON BOAT,

DEPARTMENT PUBLIC SAFETY, BUREAU OF POLICE.

\$1,000 per annum, October 18, 1912.

Experience—Weight 3.

(See page 594.)

Personal Fitness—Weight 2.

1. What work does a fireman on boat perform?
2. What kind of a man, physically and otherwise, do you think such a fireman should be?
3. Under whose direction does a fireman work?
4. In the intervals between trips, or at leisure times on board, what would you do? Have you

ever been sick? When? How long? What was the disease or cause of illness? 6. Physical condition? (Mark to be determined from the examination by the medical examiner.)

Practical Questions—Weight 5.

1. What is the greatest horsepower boiler to which a fireman can efficiently attend, including water, coal and ashes? 2. What is a dead plate? For the use of what kind of coal are "dead plates" of value? 3. Describe the proper process of firing bituminous coal. 4. What are "clinkers," and how are they to be handled? 5. What is your understanding of: (a) A stationary grate? (b) A rocking grate? Which is the better? Why? 6. Should large lumps of coal be thrown on a fire? Why? 7. What causes holes to form in a fire? If formed, what should be done? 8. What care must be exercised in shoveling coal on a fire? 9. Upon what does the thickness of the fire you can carry depend? 10. Which is the better—to fire little and often, or heavy and seldom? Why?

FOREMAN OF ASPHALT STREET REPAIRS, DEPARTMENT
PUBLIC WORKS, BUREAU OF HIGHWAYS.

\$100 per month, October 30, 1912.

Experience—Weight 3.

(See page 594.)

Practical Questions—Weight 5.

1. What is the regulation thickness of each layer of an asphalt paved street? 2. What is the legal crowning or rise of the finished paving from the gutters toward the center of the street? 3. How must the subgrade be prepared? 4. How should the concrete bed be made? And, if mixed by hand, what special precautions are necessary? 5. How long should the concrete bed stand before the

binder is put on? And in what condition must it be when the binder is put on? 6. How is the binder made and laid? 7. Describe two ways in which small defects or holes may be prepared for repairs. 8. Describe in detail, step by step, how a small hole, 2 feet by 3 feet, should be repaired. 9. Where should smoothing irons be used? Why? 10. How do you account for the fact that some asphalt streets which are seldom used for traffic are so often in need of repairs? 11. What are the chief causes of small damages that must be repaired in heavily traveled asphalt streets? 12. Why are brick gutters sometimes used on asphalt streets? How should they be laid and why? 13. What precautions would you take to prevent a small patch from peeling? 14. What repairs can be made during very cold weather? What other weather conditions interfere with repairs, and why? 15. What records should you keep of the daily work of your gang?

Personal Fitness—Weight 2.

(See page 595.)

FOREMAN OF BRIDGE REPAIRS, DEPARTMENT PUBLIC
WORKS, BUREAU OF HIGHWAYS.

\$1,200 per annum, December 19, 1912.

Experience—Weight 3.

(See page 594.)

Practical Questions—Weight 7.

1. Explain in detail how you would replace a defective rivet. 2. What is "buckling of the web"? What causes it and how can it be prevented? 3. Explain how you would splice a flange plate; a web plate. 4. Sketch and describe five common timber joints. 5. Explain in detail how you would replace the planking in the driveway of a highway bridge with a double-track trolley line. 6.

Explain how they are put in place. 8. In a trestle what steel rods used in connection with concrete construction? Explain how they are put in place. 8. In a trestle what is mean by mud sill and cap? What are stringers? 9. State in detail the repairs which are usually necessary to a masonry arch bridge. 10. What is the springing line of an arch? The keystone? The skew-back? The chamber? 11. Find the cost of the following timber: Ten boards 6 inches by 2 inches by 48 feet; 8 boards 12 inches by 2 inches by 36 feet; 12 boards 12 inches by 4 inches by 40 feet. The price per board foot is 6 cents. 12. What is the weight of a reinforced concrete beam 10 inches by 10 inches and 20 feet span? The reinforcing consists of two steel rods $\frac{3}{4}$ inches diameter. Steel weighs 490 pounds per cubic foot and concrete 185 pounds per cubic foot.

FOREMAN OF DRAINAGE OPERATIONS, DEPARTMENT
PUBLIC WORKS, BUREAU OF HIGHWAYS.

\$1,200 per annum, December 19, 1912.

Experience—Weight 3.

(See page 594.)

Practical Questions—Weight 7.

1. How many cubic yards of earth in a ditch 2 feet wide and 6 feet deep and 100 feet long? 2. Make a sketch showing the page of a time book, and show how it would be kept. 3. A ditch 5 feet deep and 2 feet at the bottom is to have side slopes of 2 vertical to 1 horizontal. What will be its width at the top? In ditches used for drainage purposes, what general care must be taken of the slopes and embankments? 5. If the ditch indicated in question "1" were through ordinary earth and it had to be dug in a day of 8 hours, how many men would you put on the job? 6. If a drainage ditch 3 feet wide crossed a dirt

road, explain in detail how you would provide for travel on the road until a permanent culvert were built. 7. When is sheathing necessary in a trench or ditch? Explain how it is used. 8. If in charge of the digging of a ditch when water was causing trouble, explain how you would try to overcome this difficulty. 9. If laborers were paid 22 cents per hour, and you had eight men who made 42 hours each, 10 who made 45 hours each, and 15 men who made 48 hours each, what would be the total amount paid out?

FOREMAN, FILTER ATTENDANTS,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.
\$1,000 per annum, October 28, 1912.

Experience—Weight 4.

(See page 594.)

Practical Questions—Weight 5.

1. How often and in what manner should records of the operation of a filter bed be taken? 2. What is the difference in construction between a preliminary or rapid filter bed and a final or slow filter bed? Illustrate by sketch. 3. How often and in what manner should you check the reports of the filter attendants? 4. What is meant by "loss of head" and how does it affect the operation of a filter bed? 5. How should a final filter bed be put into operation after cleaning? Should the method be varied according to the method of cleaning it? 6. Describe in detail two methods of cleaning filters and discuss their efficiency. 7. What factors determine when a filter should be cleaned? 8. Explain the following terms: (a) Turbidity, (b) bacterial efficiency, (c) schmutzdecke. 9. Describe in detail how samples of the raw and filtered water should be taken, noting all the precautions.

Report Writing—Weight 1.

Write a letter about 200 words long to the Chief of the Bureau of Water in reply to a letter from him asking you to "investigate and report why the water from filter bed No. 4 contains more than the maximum number of bacteria permitted."

GENERAL FOREMAN,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.
\$1,000 to \$1,500 per annum, July 23, 1912.

Training and Experience—Weight 3.

(See page 594.)

Practical Questions—Weight 7.

1. Sketch or draw cross-sections showing three types of street paving in use in Philadelphia. Give materials and thickness of each, and the proper method of laying each course. 2. Describe fully the method of mixing concrete by hand. What are the usual proportions? How would you measure your sand and stone? 3. (a) When is sheathing necessary for a trench? (b) What material would you use? (c) How would you protect any pipes or conduits that you found crossing the trench? (d) When is tunneling used, and how would you backfill where you used tunneling? 4. (a) What is the principal cause of leaks in mains? Describe fully. (b) How are leaks in mains detected? (c) How are mains tapped while under pressure? 5. Name and draw sketches of all special castings for cast iron pipe. 6. What is an air valve on a pipe line? What is a blow-off valve? Where is each placed and for what purposes are they used? 7. How would you hold your line and grade given by the engineer? How are they usually given? 8. A trench is to be excavated 162 yards long 2 feet 6 inches wide and 6 feet deep. Each man can excavate 9

cubic yards per day and is paid \$2 per day. How many men would you need to finish the excavation in $2\frac{1}{2}$ days, and what would be the total sum of wages paid for labor? 9. Describe fully your method of backfilling and cleaning up. What safeguards are necessary to protect both your own men and traffic on the street? 10. What are the duties of a general foreman?

FOREMAN, DEPARTMENT PUBLIC HEALTH AND
CHARITIES, BUREAU OF HEALTH.

\$1,000 per annum, October 19, 1912.

Experience—Weight 3.

(See page 594.)

Personal Fitness—Weight 2.

(See page 595.)

Practical Questions (Oral)—Weight 5.

1. If you had 20 men working on the roads, lawns, pavements and flower beds of an institution what equipment would you need to have? 2. Explain in detail the planting of bulbs in a 10-foot circular flower bed of tulips and hyacinths. 3. How should whitewash be prepared? Is there any way of using it so that it will act as a disinfectant? 4. How would you assign window cleaners in their work so as to get the greatest amount of work from each one? 5. How would you repair a gravel road which had been washed out in a number of places? 6. What precautions would you take in putting away the gardeners' equipment at the end of the season? 7. If you had a piece of road to build and the materials on hand were broken stone and bricks, cinders and some fine broken stone, tell in detail how you would make use of these for the work. 8. A walk of five feet wide is to be laid on all sides of a building 30 feet by 50 feet. A terrace 6 feet wide is to be placed

between the building and path. The path is to be curved at the corners of building; inside radius is 6 feet. Explain the layout.

FOREMAN OF PAINTERS, ANY DEPARTMENT.

\$1,000 per annum, December 21, 1912.

Experience—Weight 3.

(See page 594.)

Practical Questions—Weight 7.

1. If one gallon of paint will cover 180 square feet, how much paint will be required to paint the walls and ceilings of a room 32 feet by 48 feet and 15 feet high, with a door 4 feet by 10 feet and 2 windows each 3 feet by 7 feet? 2. Give the names of three bases used in the mixing of paints. State the uses of each and tell any advantages each would have for particular kinds of work. 3. Give the names of two pigments commonly used to produce the following: (a) Black; (b) red; (c) brown; (d) green. 4. If you are to use ultramarine blue as a pigment, what base would you use? Why? 5. What is raw linseed oil? Boiled linseed oil? When should each be used? Give your reasons. 6. If you had 12 painters working under you and you were assigned to work in City Hall, outline a method of keeping account of work done and material used. 7. Assuming that 12 new men were assigned to work under you, what directions would you give them and what regulations would you make in regard to care of brushes, tools, ladders, materials, etc.? 8. Some new steel columns and beams are to be painted. Before being put in place they had been exposed to the weather. State clearly all the work that would have to be done. 9. This examination room is 95 feet long, 48 feet wide and about 30 feet high. Estimate (a) the number of gallons of paint it would require to give

it two coats; (b) the number of days it would require 10 painters to do the work; (c) the cost of the paint; (d) the cost of the labor. Assume present prices and also show all your figuring. 10. Name all possible causes of paint scaling off. 11. The applicant will be given a test for color blindness.

FOREMAN OF PLUMBERS, ANY DEPARTMENT.

\$1,000 per annum, December 20, 1912.

Experience—Weight 3.

(See page 594.)

Practical Test and Questions—Weight 7.

1. Wipe a 4-inch joint to a brass ferrule. This joint must be wiped upright. 2. If a water-back and range connections to a circulating boiler were frozen, how would you proceed to correct the fault? 3. (a) What is the purpose of a vent pipe? (b) How high should it extend above the roof? 4. (a) What is atmospheric pressure? (b) What is syphonic action? (c) What is the maximum height to which water may be drawn by a pump? 5. Mark all errors on the plan which will be furnished to you. Write explanations in the blank spaces on the right side of the paper.

FOREMAN OF PRINTERS, DEPARTMENT PUBLIC HEALTH
AND CHARITIES, BUREAU OF CHARITIES.

\$1,000 per annum, December 20, 1912.

Training and Experience—Weight 3.

(See page 594.)

*Test in the Practice of Printing and Oral Questions—
Weight 7.*

1. Lock up a form, put it in a press and run 100 copies. Run work a second time as test for register. 2. Mark all corrections on the printed proof which will be furnished

Not with Connection opposite other
Pine Not Tapped and a Basin
showing at Closets

2nd Pine and Notted
at from line
be less than 2 in
be at least 2nd and Connection
d be made with a g. Not a g
pool Should have a Back Gate Valve
Pine Should not be Connected up
to an open Fixture a sink Properly

to you. 3. Explain the following terms: (a) Pica; (b) point; (c) em. 4. How much paper would you order to print 5,000 full-size letter sheets? 5. Mark letters, figures and spaces on the plan of a type case.

FOREMAN OF REPAIRS,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.
\$850 per annum, December 7, 1912.

Experience—Weight 3.

(See page 594.)

Practical Questions—Weight 7.

1. A 10-inch water pipe is to be laid in a cobble-paved street. Twenty men are in the gang. What tools would you need? How would you distribute your men? 2. State in detail the operation of setting a fire hydrant. 3. A water main breaks near the foundations of a building. How would you guard against damage to the building? 4. How much trench 2 feet wide 6 feet deep should a man dig in a day? 5. Describe your method of shoring a 3-foot trench in soft earth where side of trench is 2 feet from trolley track.

FOREMAN OF REPAIRS,
DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.
\$850 per annum, December 7, 1912.

Experience—Weight 4.

(See page 594.)

Practical Questions—Weight 6.

1. You are sent out to repair a break in a water pipe in a street paved with granite blocks on a concrete foundation. What tools would you take and how would you go about the repairs? 2. How much trench in ordinary clay soil, 2 feet wide and 5 feet deep, should a man dig in a day? 3. When is shoring necessary? Explain in detail
40—cs

how you would shore up a trench in soft earth on a street where the traffic was heavy and could not be stopped. 4. If in charge of the pipe laying on a job four squares long, how would you distribute your men? How many men could be used on this job? What tools would they need? 5. Explain the operation of laying a water pipe. How is a stop-valve set? A fire hydrant?

FOREMAN OF STABLES, DEPARTMENT PUBLIC HEALTH
AND CHARITIES, BUREAU OF CHARITIES.

\$800 per annum, July 5, 1912.

Experience—Weight 4.

(See page 594.)

Practical Questions (Oral)—Weight 6.

1. What attention would you give a horse that has been returned to the stable in a sweated condition after a hard day's work? 2. What difference in feed (both in quantity and kind) would you make for a heavy work horse and a carriage horse? How would you vary this feed on the days the horse is not out of the stable? 3. What would you do for a horse with a sore shoulder? 4. How often should a wagon be greased? How should the amount and kind of grease vary for different wagons? 5. What care should be taken of a wagon when not in use? 6. What care should be taken of harness? 7. What would you expect a chauffeur to do for his automobile when he brings it into the stable or garage and when he takes it out? 8. How should a stable be kept during the summer? 9. What is the best material for bedding horses, and how often should it be renewed? 10. What rules would you make for your assistants in the stable or garage?

FOREMAN OF TAILORING, DEPARTMENT PUBLIC
SAFETY, BUREAU OF CORRECTION.

\$900 per annum, December 14, 1912.

Experience—Weight 4.

(See page 594.)

Practical Questions—Weight 6.

1. Are you a practical tailor? If so, what garments can you make? 2. What are the most essential materials to be used in making a coat? 3. State in detail each step of the actual process of making a coat. 4. Measure a man whom the attendant will point out to you for a complete suit. (a) Draft and cut out the pattern. (b) How many yards will this measurement take if the goods on the $6\frac{1}{4}$ width is 50 inches wide? (c) What is the position of the shoulders of the man you measured? (d) Is the man's form normal or abnormal? (e) What findings will be necessary for this coat?

FOREMAN OF UNPAVED AND MACADAM STREETS, DEPART-
MENT PUBLIC WORKS, BUREAU OF HIGHWAYS.

\$100 per month, December 19, 1912.

Experience—Weight 3.

(See page 594.)

Practical Questions—Weight 7.

1. What materials are used on the construction of a macadam road? Make a sketch showing the location of these different materials, giving the depth of each. 2. State clearly the general requirements in regard to stone used for macadam roads with special reference to durability, size and also the different kinds. 3. In constructing a macadam road, how many different times is a roller used and what is the proper weight of roller? In each case used, how long should the rolling be continued? What are the objections to a horse roller? 4. If in repairing a macadam road you found a soft spot after it is brought to

subgrade, explain how you would fix it. 5. What care should be taken of unpaved streets so that they may be always in fair condition? 6. What rise from gutter to crown is given in building a macadam road? 7. In finishing a macadam road how high is the finished top above the surveyors' stakes? 8. Describe at least five different kinds of binders that may be used and discuss the advantages and disadvantages of each. 9. Give at least eight essential things necessary to the successful construction of a broken stone pavement. 10. If the depth of the stone is 4 inches and the pavement is 8 feet wide, it will require 645 cubic yards of broken stone per mile. (a) Show how many cubic yards per mile would be required for a pavement 16 feet wide; 30 feet wide; 32 feet wide. (b) Show how many cubic yards would be required per mile if the stone were 6 inches deep; 10 inches deep; 14 inches deep.

FOREMAN OF YARD GANG, DEPARTMENT PUBLIC
HEALTH AND CHARITIES, BUREAU OF CHARITIES.

\$25 per month, October 28, 1912.

Experience—Weight 5.

(See page 594.)

Personal and Physical Fitness—Weight 5.

(See page 595.)

FOREWOMAN OF LAUNDRY, DEPARTMENT OF PUBLIC
HEALTH AND CHARITIES, BUREAU OF CHARITIES.

As per Ordinance, July 26, 1912.

Experience—Weight 3.

(Same oral sheet as MATRON (Police), see page 551.)

Practical Questions (Oral)—Weight 7.

1. State in order the various operations through which dirty clothes must pass to be rendered clean and fit for

use. 2. If inmates were used to help in the laundry what would be your method of handling them? 3. How would you follow up the work to see that no clothing improperly starched or washed was allowed to pass through? 4. Name the various classes into which clothes should be sorted before going through the laundry. Give your reasons. 5. How is bleaching done? Why should clothing be thoroughly rinsed? What are the different methods of preparing starch?

LAUNDRESS AND FOREWOMAN OF LAUNDRY (ORAL), DEPARTMENT OF HEALTH AND CHARITIES,
BUREAU OF CHARITIES.
As per Ordinance, October 17, 1912.

Experience—Weight 5.
(See page 595.)

Personal Fitness—Weight 3.
(See page 595.)

Practical Questions—Weight 2.

1. Name two kinds of work done by machinery in a modern laundry. 2. How would you prepare raw starch? How would you prepare boiled starch? 3. What would be the effect of leaving dampened clothes stand too long before ironing? 4. What would be your attitude toward insane helpers assigned to assist in the laundry? 5. What is a dampening machine and how is it used?

LAUNDRESS AND FOREWOMAN OF LAUNDRY, DEPARTMENT
OF HEALTH AND CHARITIES, BUREAU OF CHARITIES.

\$18 to \$20 per month, December 14, 1912.

Experience—Weight 5.

(See page 594.)

Physical Fitness—Weight 5.

(See page 595.)

GAS FITTER (ORAL), ANY DEPARTMENT.

As per Ordinance, October 28, 1912.

Experience—Weight 5.

(See page 594.)

Personal and Physical Fitness—Weight 2.

(See page 595.)

Practical Questions—Weight 3.

1. How would you determine the diameter of the main supply pipe for a house? 2. If the location of pipes is not decided by the architect, what principles should govern you in locating them? 3. Describe the following fittings: (a) Male and female extension piece. (b) Drop elbow. (c) Cross. (d) Tee. 4. After the pipes are in place and properly secured, how should they be tested? 5. How can you locate a leak before the system is connected with the main supply? 6. Why should gas fixtures not be located near radiators or registers? 7. How are joints made gas-tight?

HOSTLER,
DEPARTMENT PUBLIC SAFETY, BUREAU OF POLICE.
\$60 per month, July 16, 1912.

Experience—Weight 6.
(See page 594.)

Practical Questions—Weight 4.

1. When horses are returned from work in a heated condition in the evening, describe the care they should receive before returning to work on the following morning. 2. What features would you observe in an inspection of a horse before permitting it to leave the stable? 3. What are the things that you would observe in harnessing and hitching a horse to a wagon? 4. What examination of a wagon would you make before sending it out? 5. Supposing a team be returned to you in the evening, how would you care for your harness?

LAMPLIGHTER,
DEPARTMENT PUBLIC SAFETY, BUREAU OF CORRECTION.
\$300 per annum, December 14, 1912.

Experience—Weight 5.
(See page 594.)

Physical Fitness—Weight 5.
(See page 595.)

LINEMAN,
DEPARTMENT PUBLIC SAFETY, ELECTRICAL BUREAU.
\$1,100 per annum, October 25, 1912.

Experience—Weight 3.
(See page 594.)

Personal Fitness—Weight 2.
(See page 595.)

Practical Questions—Weight 5.

1. Explain in detail two methods of splicing an insulated copper wire.
2. Give the names of the appliances used in making attachments to poles. In carrying wires across house tops what method is used?
3. In running a pole line from one street to another at right angles to it, what special care must be taken in planting the corner pole?
4. Give the names of three materials used for insulators and state the advantages of each.
5. What are the causes of grounding of a wire? How would you locate it and what is its effect on the system?
6. Explain the operation of planting a pole, giving the names of all implements used.
7. What are the causes of leakage in a line and what care must a lineman take to prevent leakage from poor installation?
8. What dangers result from the crossing of telephone and telegraph wires with electric light wires? What general precautions should be taken to avoid these dangers?
9. If a line is run in hot weather, what care must be taken to prevent breaking when the weather becomes cold?

MACHINE LAUNDRYMAN (ORAL), DEPARTMENT OF PUBLIC
HEALTH AND CHARITIES, BUREAU OF CHARITIES.

As per Ordinance, October 23, 1912.

Experience—Weight 5.

(See page 594.)

Personal Fitness—Weight 3.

(See page 595.)

Practical Questions—Weight 2.

1. If the covering of a mangle should become damaged how would you replace it? 2. What precautions must be taken in the use of laundry machinery so as to prevent accidents? 3. What would be your general attitude toward inmates assigned to help in the laundry? What special care would you have to take if they were insane patients? 4. Give the names of two bleachers used in laundry work. Tell how you would use them. 5. Give the names of three machines used in a laundry and tell the use of each.

MACHINIST, ANY DEPARTMENT.

\$1,000 and less than \$1,500 per annum, March 8, 1912.

Experience—Weight 2.

(See page 594 and the following supplementary information.)

1. State fully and in detail all the practical experience you have had as a machinist, or in any other occupation of a similar character. State (a) when, giving dates; (b) where; (c) by whom you were employed; (d) the salary or compensation received; (e) the specific nature of your duties in each case. 2. State any additional facts which may tend to show your fitness for the position for which you have applied.

Practical Questions—Weight 8.

1. How would you turn up a piston for a 24-inch cylinder? 2. How would you turn up a crank-shaft? 3. How would you bore out a 12-inch stop-valve and give the seat an angle of 45 degrees? 4. How would you line up an engine? 5. Make a sketch of the kind of tools you would use in cutting brass; also the kind you would use in cutting steel. 6. How would you scrape in a slide-valve on a slide-valve engine? 7 Explain a lathe. What kind of work do you do on this machine? 8. How would you bore out an engine cylinder of about 40 inches diameter? This engine has been running some time and the cylinder is badly scored. 9. Explain or make a sketch of how you would turn up an eccentric that had a 6-inch throw. 10. Explain in full how you would cut the threads on a 3-inch rod, having 6 threads to the inch.

MACHINIST'S HELPER.

As per Ordinance, March 13, 1912.

(Same questions as for SKILLED LABORER. See page 646.)

MANAGER OF LAUNDRY, PHILADELPHIA GENERAL HOSPITAL, DEPARTMENT OF HEALTH AND CHARITIES, BUREAU OF CHARITIES.

\$1,200 per annum, March 1, 1912.

Experience—Weight 2.

(See page 594.)

Practical Questions—Weight 6.

1. How should a mangle be dressed? 2. What are the usual causes of a mangle running "rough dry"? 3. What is an "extractor," and for what is it used? 4. Tell how an ironing machine should be kept in order. 5. Describe a

dampening machine. 6. If you are required to equip a laundry of sufficient size to do the work for 1,000 people, what machinery would you need? 7. Given 20,000 pieces of wash each week, state in detail about how large a force of men and women would be needed, and how they would be distributed at the various tubs and machines, etc. 8. Describe the process of washing linen from start to finish. 9. Tell how you would use the following in laundry work? (a) Oxalic acid? (b) Chloride of lime? 10. Give a recipe for cooking starch and tell how a "gloss finish" is produced; a "domestic finish." 11. Tell how you would use cooked or prepared starch; also cold starch. 12. What is the object of sorting clothes? Into what classes would you sort them, and why? 13. State the very best bleacher to use, and tell why. 14. Inmates are assigned to assist in laundry work. What would be the proper course to pursue to get the most and best work out of them? 15. If any of the insane helpers should become unruly, what should be done? 16. Give in detail the best method of disinfecting clothes in a large institutional laundry.

Report Writing—Weight 2.

Write a report to the Superintendent of the Philadelphia General Hospital of a breakdown you have had with a piece of machinery in your department and give a statement as to the condition of all the machinery in your care. Assume any facts you like in order to write a comprehensive report of not less than 150 words. Do not sign your name to this report; use your examination number instead.

OILER,

DEPARTMENT PUBLIC WORKS, BUREAU OF WATER.

As per Ordinance, July 10, 1912.

Experience—Weight 2.

(See page 594.)

Practical Questions—Weight 8.

1. Name three utensils an oiler uses and tell the use of each. 2. What are the duties of an oiler? 3. Describe some solid lubricant and give an example of how and where used. 4. Name three important parts of an engine. 5. What would you do in case an oil cup on your machinery became clogged? 6. What parts of an engine require the most attention while the engine is running? 7. Name two kinds of liquid lubricants. 8. In what manner is oil supplied to the cylinder of an engine? 9. What is the cause of "overheating"? What would you do if it occurs? 10. If you were an oiler in a pumping station what would be the first thing you would do when going on duty?

OPERATOR,

DEPARTMENT PUBLIC SAFETY, ELECTRICAL BUREAU.

\$1,200 per annum, March 1, 1912.

Experience—Weight 3.

(See page 594.)

Arithmetic—Weight 1.

1. Add: 796854, 3768, 53693, 285, 7354, 243479. 2. Subtract 7685495 from 9676846. 3. Multiply 2695 by 68. 4. Divide 628694 by 32. 5. Multiply $\frac{7}{8}$ by $\frac{2}{5}$.

Practical Questions—Weight 5.

1. Make a sketch of a 50-line telephone switchboard, showing the essential parts. 2. Give in detail every operation necessary by the operator from the time a call is re-

ceived until the conversation is completed. 3. What care, if any, should be taken in the operation of a telephone switchboard, and what parts are most likely to get out of order? 4. What kind of batteries are usually used for the operation of common battery switchboards? 5. Two types of switchboard are in use, known as the visual and lamp supervisory signal switchboards. Point out the difference between the two. 6. What is a hand generator and for what purpose is it used by the operator? 7. Explain what is meant by "protector equipment"; tell what it consists of, and why it is required. 8. What is a "night bell" and how is it operated? 9. Suppose "cross talk" fault has been localized into the switchboard by disconnecting the outside lines. If it is still in evidence how would you test for it? 10. Name some conditions in the operator's environment that would interfere with the proper performance of his work.

Spelling—Weight 1.

1. Local. 2. Battery. 3. Transmitter. 4. Circuit. 5. Receiver. 6. Instrument. 7. Current. 8. Exchange. 9. Coil. 10. Central. 11. Electrical. 12. Apparatus. 13. Signal. 14. Instructions. 15. Connection. 16. Directory. 17. Subscriber. 18. Distance. 19. Defect. 20. Resistance.

PAINTER, ANY DEPARTMENT.

As per Ordinance, October 25, 1912.

Experience—Weight 4.

(See page 594.)

Practical Questions—Weight 6.

1. How should new woodwork containing knots be treated before applying the first coat of paint? 2. When should nail holes be puttied? Why? 3. What is sizing? How is it prepared? When is it used? 4. What two colors

are mixed together to produce green? 5. When would you use boiled linseed oil in mixing paint in preference to raw linseed oil? 6. In giving outside woodwork three coats of paints, would there be any difference in mixing? Which coat should be thinner than the others? Why? 7. Name two materials used as bases in mixing paints and tell in what kind of work you would use each one. 8. If one gallon of paint will cover 200 square feet, how much paint will be required to paint both sides of a fence 6 feet high about a square lot 242 feet on a side? 9. What is shellac? How do you mix it and what is used to thin it down? 10. What is graining? Name the tools and materials used and explain the operation in detail? 11. If assigned to paint some new structural iron or steel work, what special preparation would you make? 12. Using the numbers as an index, give the names of the colors on the accompanying chart. (The chart used showed about twenty-four different shades and colors.)

PATTERN MAKER, ANY DEPARTMENT, ANY BUREAU.

As per Ordinance, October 28, 1912.

Experience—Weight 4.

(See page 594.)

Practical Test—Weight 6.

1. What is meant by a balanced core? 2. What is a chaplet? 3. What is a dog? 4. What is draft in a pattern? 5. What is a box fillet and why is it used? Show by sketch. 6. Examine the casting on the table and make sketches showing the necessary pattern with core prints attached and of the core boxes. (The casting was a large shaft straightener.)

PAVER, DEPARTMENT PUBLIC WORKS, BUREAU OF
HIGHWAYS AND STREET CLEANING.

\$3.75 per day, June 20, 1912.

Experience—Weight 2.5.

(See page 594.)

Physical Fitness—Weight 2.5.

(See page 595.)

Practical Questions—Weight 5.

1. How many times should a street be rammed after paving to make a good job? 2. After paving and ramming, what should be done? 3. What should be the depth of a gutter on a block-paved street? 4. In repairing a brick or block-paved street on a concrete foundation what should be the depth of the sand bed? 5. In repaving ditches on a sand foundation how many laborers and teams should be in a paving gang of one paver and one rammer? 6. How should the intersections of brick-paved streets be laid? 7. How many square yards of brick paving, sand foundation (ditch work), in the one locality, will a paver, a rammer and two laborers do in eight hours? 8. What tools are required in paving?

PAVER, DEPARTMENT PUBLIC WORKS, BUREAU OF
HIGHWAYS AND STREET CLEANING.

\$3.75 per day, August 27, 1912.

PAVER, DEPARTMENT PUBLIC WORKS, BUREAU OF
HIGHWAYS AND STREET CLEANING.

\$3.75 per day, September 24, 1912.

Practical test in actual work, the following points being noticed: Age, years of experience. Making the bed; handling the hammer; handling stone; bedding stone; evenness of work; speed; experience; physical condition.

PIPE FITTER'S HELPER,
ANY DEPARTMENT, ANY BUREAU.
As per Ordinance, March 13, 1912.

(Same questions as for SKILLED LABORER, see page 646.)

PIPE FITTER'S HELPER,
ANY DEPARTMENT, ANY BUREAU.
As per Ordinance, October 30, 1912.

Experience—Weight 5.

(See page 594.)

Practical Questions—Weight 2.

1. What is the difference between a male and female thread? 2. How is a male thread made? 3. How is a female thread made? 4. Name five different kinds of joints or turns. 5. Which of the following pipes must be laid with a pitch or slope? Why and how? (a) gas, (b) water, (c) steam, (d) waste. 6. Where in a house would the following kinds of pipes be used. (a) Brass, (b) lead, (c) galvanized iron, (d) wrought iron?

Personal Fitness—Weight 3.

(See page 595.)

PLASTERER'S HELPER, ANY DEPARTMENT.

As per Ordinance, March 13, 1912.

(Same questions as for SKILLED LABORER, see page 646.)

PLASTERER'S HELPER (ORAL),
ANY DEPARTMENT, ANY BUREAU.
As per Ordinance, October 30, 1912.

Experience—Weight 5.

(See page 594.)

Personal Fitness—Weight 3.

(See page 595.)

Practical Questions—Weight 2.

1. What does good plaster contain? 2. How many coats should be put on a wall to make a good job? 3. What is the usual thickness of the plaster on a wall? 4. How would you plaster a board partition? 5. How long should the first coat of plaster on a board partition be allowed to stand before putting on the second coat? 6. How is the plaster kept uniformly even on a wall? 7. What would you do with plaster that had been left over from the day before? 8. What is the white coat? Of what is it made? 9. What do you mean by pebble dashing a building?

PLUMBER,

ANY DEPARTMENT, ANY BUREAU.

As per Ordinance, September 9, 1912.

Experience—Weight 6.

(See page 594.)

Practical Questions—Weight 4.

1. How would you wipe a joint between a galvanized iron pipe and a lead pipe? Why is a brass nipple used? What is plumbers' soil? When is it used? 2. Describe how you would make either a water test or an air test of a drainage system. 3. Tell in detail how you would caulk a joint in cast iron drain pipes. 4. What is a trap? A vent pipe? What is the use of each in plumbing work? What special provision must be made in connecting a refrigerator to a drainage system?

PLUMBER'S HELPER, ANY DEPARTMENT.

As per Ordinance, March 13, 1912.

(Same questions as for SKILLED LABORER, see page 646.)

PORTER (ORAL), DEPARTMENT OF PUBLIC HEALTH AND
CHARITIES, BUREAU OF CHARITIES.

\$25.50 per month, October 16, 1912.

Personal and Physical Fitness—Weight 6.

(See page 594.)

Experience—Weight 2.

(See page 595.)

Practical Questions (Oral)—Weight 2.

PUMPMAN,
DEPARTMENT PUBLIC SAFETY, ELECTRICAL BUREAU.

\$3 per day, March 8, 1912.

Experience—Weight 2.

(See page 594, also the following:)

1. State fully and in detail all the practical experience you have had as a pumpman, or in any other occupation of a similar character. State (a) when, giving dates; (b) where; (c) by whom you were employed; (d) the salary or compensation received; (e) the specific nature of your duties in each case. 2. State any additional facts which may tend to show your fitness for the position for which you have applied.

Practical Questions—Weight 8.

1. Make a sketch of a pump showing both steam and water ends; also showing the valves on the water end. 2. A double-acting, duplex pump, 10-inch plunger, 16-inch stroke, making 60 strokes a minute; how many gallons of water will it throw in an hour? Leave all figures on your examination paper. 3. How would you set the valves on a Worthington pump? 4. Explain or make a sketch of some automatic pump regulator. 5. How would you put in

a new set of water valves? 6. Make a sketch of your pressure tank with all its connections, and explain what use this tank is. 7. How would you pack your water plunger, also your glands, on both the water and steam ends? 8. What is the use of an air-chamber on your pump? 9. Give a full explanation of how you would start up a boiler. 10. What pressure would you allow on a pressure tank, 44 inches diameter, 20 feet long, thickness of metal $\frac{3}{8}$ inch, tensile strength 55,000 pounds, efficiency of steam 75 per cent.; allow a factor of safety of 4. Leave all figures on the paper.

PUMPMAN (ORAL),
DEPARTMENT PUBLIC SAFETY, ELECTRICAL BUREAU.

\$3 per day, October 29, 1912.

Experience—Weight 3.

(See page 594.)

Personal Fitness—Weight 2.

(See page 595.)

Practical Questions—Weight 5.

1. What is the purpose of an air-chamber in the suction and in the discharge from the water end of a pump? 2. Name five different kinds of pumps and tell the advantages of each. 3. What factors must be known to determine the number of gallons of water a pump will discharge in an hour? 4. What is meant by slip in pump? 5. Explain the action in the water end of a double-acting pump. 6. Explain the action of the steam end of a compound duplex-pump. 7. Which wears more rapidly, the piston rod or the plunger rod? 8. How is the plunger lubricated? 9. How can you tell when the water in the supply tank falls too low? What should you do? 10. What parts of a pump wear out more rapidly and why?

RAMMER, DEPARTMENT OF PUBLIC WORKS, BUREAU OF
HIGHWAYS AND STREET CLEANING.

\$3.25 per day, August 27, 1912.

Practical test, including: Age. Years of experience.
Handling hammer; evenness of work; speed; experience;
physical condition.

RIGGER, ANY DEPARTMENT, ANY BUREAU.

As per Ordinance, July 5, 1912.

Experience—Weight 4.

(See page 594.)

Practical Questions—Weight 6.

1. Name four articles a rigger uses and give the use of each. 2. (a) Name and explain the various parts of a wire cable. (b) How would you repair a break? 3. (a) Name three kinds of work that could be done by means of a derrick. (b) How would you arrange to hoist building materials to the roof of a high building? 4. (a) What advantage is gained by the use of more than one pulley? (b) What means are used to increase power? (c) Name the various kinds of rope used by riggers and explain the care of each. 5. Describe in detail the manner of raising a safe of 1,000 pounds to the fourth floor of a six-story building.

SKILLED LABORER, ANY DEPARTMENT, ANY BUREAU.

\$2.25 to \$3 per day and as per Ordinance, March 13, 1912.

Experience—Weight 2.

(See page 594.)

Practical Questions—Weight 6.

1. Name three tools a carpenter uses and tell what work is done with them. 2. Of what is mortar made? 3. Why

is wire used by electricians insulated or covered? 4. What tools and materials are used in soldering? 5. What is a tap and die used for?

Personal Fitness—Weight 2.

(See page 595.)

STEAMFITTER, ANY DEPARTMENT, ANY BUREAU.

As per Ordinance, September 9, 1912.

Experience—Weight 6.

(See page 594.)

Practical Questions—Weight 4.

1. Name two kinds of steam pipe covering. What is the object of the covering and which gives the best results? 2. In running a steam main along a ceiling how would you arrange it and what pitch would you give it? What is the purpose of the pitch? 3. What is a dry return main? A wet return main? 4. Make a sketch of the lines to and from a steam radiator telling how it is connected and giving names of various parts.

STEAMFITTER'S HELPER, ANY DEPARTMENT.

As per Ordinance, March 13, 1912.

(Same questions as for SKILLED LABORER. See page 646.)

STONEMASON, ANY DEPARTMENT, ANY BUREAU.

As per Ordinance, July 25, 1912.

Experience—Weight 3.

(See page 594.)

Practical Questions—Weight 7.

1. What materials and what proportion of each would you use in making cement mortar for foundation walls? 2. What is bonding? How would you bond a wall 24

inches thick? 3. What would be the thickness of a foundation wall for a three-story building 20 feet wide? How thick would the brick wall above it be? 4. What materials are used in making lime mortar? In what proportion? How would you test sand? 5. Describe the method used to keep a wall plumb and in line.

SUPERINTENDENT OF HORSES, DEPARTMENT OF PUBLIC
SAFETY, BUREAU OF POLICE.

\$1,800 per annum, July 12, 1912.

Experience—Weight 3.

(See page 594.)

Arithmetic—Weight 1.

1. Find the total cost of the following: 9600 pounds oats, at $59\frac{1}{2}$ cents a bushel; 480 bushels shelled corn, at $87\frac{1}{2}$ cents; 25,000 pounds of bran, at \$26.50 per ton; 20 loads straw (3,000 pounds each), at \$17.50 per ton; 200 bales of hay (200 pounds each), at \$27.50 per ton. 2. If a bale of hay measures 18 inches by 30 inches by 5 feet and a bale of straw 2 feet by 3 feet by 5 feet, how many bales of hay and straw can be stored in a stable loft 33 feet by 15 feet by 6 feet, so that there are twice as many bales of hay as of straw? 3. How many bushels of shelled corn and oats and hundredweights of pressed bran can you store in a stable with 4 corn bins each $3\frac{1}{2}$ feet by 3 feet by 4 feet; 5 oat bins each 4 feet by 4 feet by 6 feet, and a floor space measuring 8 feet by 9 feet for bran, if the sacks of bran are piled flat and 5 sacks high?

Practical Questions—Weight 4.

1. What rules would you give your stablemen about the feeding and cleaning of patrol horses? 2. What rules would you make your stablemen observe in their general

conduct at the stables? 3. What kind of horses would you purchase for (a) van service, (b) patrol service, (c) mounted police? State your reasons. 4. State the principal causes, symptoms, and methods of treating colic in horses. 5. Under what conditions would you dispose of a horse and how? 6. What are the best shoes for the horses in the different services of your department? 7. How would you make sure of keeping the horses' feet in good condition? 8. What precautions would you take to keep your stables in sanitary condition? 9. In buying horses, what points should you examine to insure getting good horses? 10. Name ten common ailments or diseases (not including colic) of horses and their symptoms. Which of these would you feel capable of treating yourself and how? Which ones should be referred to a veterinary?

Report Writing—Weight 2.

1. Complaint has been made to the Director of Public Safety and by him forwarded to you that one of the drivers of a patrol wagon on the Twenty-seventh District was working a horse with a sore shoulder. Assume that you have investigated the matter and write a detailed report in the form of a letter to the Director of Public Safety. 2. Arrange the following data in tabular form, with appropriate headings, to send to the Director of Public Safety, showing the condition of your department in these districts: District A—4 patrol horses, 2 patrol wagons, 10 bales hay, 5 bales straw, 120 bushels shelled corn, 100 bushels oats, 600 pounds bran. District B—6 bales straw, 90 bushels oats, 500 pounds bran, 12 bales hay, 3 vans, 8 horses, 72 bushels corn. District C—150 bushels oats, 10 bales straw, 50 horses for mounted police, 203 bushels corn, 44 bales hay. District D—3 patrol wagons, 45 bales hay, 75 bushels oats, 7 horses, 10 bales straw.

SUPERINTENDENT OF SHOP (CONSTRUCTION AND REPAIR
SHOP), DEPARTMENT OF PUBLIC WORKS,
BUREAU OF WATER.

\$1,500 per annum, March 1, 1912.

Experience—Weight 2.

(See page 594, and the following:)

State what experience you have had: (a) Industrial shops; (b) in handling men; (c) making improvements in shops and shop methods.

Practical Questions—Weight 6.

1. Sketch the lay-out of the machine tools, tool room, store room, office, etc., for a small machine shop doing general repair work and employing about 50 men. Give a list of the machine tools you would expect to find in such a shop, and state the capacity of each. 2. If you have ever worked in a poorly managed and inefficient shop, describe the conditions, and, if you can, tell how the shop got into such condition. If you have never worked in such a shop, state what you think the conditions would be, and where the fault would lie. 3. State briefly the steps you would take, and the order in which you would take them, to bring the above shop up to an efficient condition. 4. Describe very briefly (limit 400 words) a simple method of cost keeping for a machine shop. 5. Describe very briefly (limit 400 words) a shop tool room; what you consider the best method of stowing, issuing, caring for and accounting for the tools. 6. Describe very briefly (limit 400 words) the care of belting in a machine shop. 7. If the total cost of labor, material and indirect expense is \$450, material cost \$65, what is the labor cost when the indirect expense is 50 per cent. of the direct labor charge? 8. What is day work? Piece work? Premium work? 9. What are the advantages and disadvantages of each of the above sys-

tems of payment? 10. Make a rough sketch of the pump end of a pumping engine, showing your valves and plunger. 11. How would you re-babbitt a set of main bearing boxes? 12. How would you re-bore a steam cylinder of about 48 inches diameter? 13. How would you turn up a crank-shaft that had three crank-pins each advanced 120 degrees? 14. Make a rough sketch of connecting rod of a steam engine, this drawing, with dimensions, to be presented to men under your charge to work from. 15. Explain thoroughly a lathe and what work is generally done on this machine. 16 Explain how you would fit up a brass angle valve and test the same to know it was in good condition when it left the shop. In answering this question, you must consider that all castings were received in the rough from the foundry. 17. How would you put a new set of tubes in a boiler? 18. How many gallons of water would a double-acting pump throw per minute; size of cylinder 7 inches diameter by 12-inch stroke; making 70 revolutions per minute; allowing 5 per cent. slippage? 19. (a) Explain in full how you would line up an engine. (b) Also how you would set the valves on a common slide-valve engine.

Report Writing—Weight 2.

Write a letter to the Civil Service Commission upon the following subject: Assuming that the pedestal cap of a 20-inch main shaft on the engine had broken and a new cap, in its rough state, was presented to you to be machined and re-babbitted, and fitted up ready to go back in place of the one that had been broken. Give a comprehensive report as to what you find necessary to be done, a statement of the work you are going to do, the progress that you have made on it and when it may be expected to be completed. Do not sign your name to this letter; use your examination number instead.

**SWEEPER AND CLEANER, LAVATORY ATTENDANT, ETC.,
ANY DEPARTMENT, ANY BUREAU.**

\$2 per day and as per Ordinance, July 20, 1912.

Physical and Personal Fitness—Weight 10.

(See page 595.)

TINSMITH, ANY DEPARTMENT, ANY BUREAU.

As per Ordinance, July 12, 1912.

Training and Experience—Weight 2.

(See page 594.)

Practical Questions—Weight 8.

1. What are some of the tools used by a tinsmith? 2. What is solder and how is it used? 3. What is put on tin in order to make the solder hold? 4. What is the difference between good and bad tin? 5. When would you first paint a new roof and why? 6. Tell how you would make a flat seam on a tin roof. 7. Tell how you would make a standing seam on a tin roof. 8. How would you prepare a good roof paint? 9. Name something upon which the durability of tin depends. 10. Tell how you would cut a sheet of tin to form a funnel. What kind of a joint would you make?

TINSMITH'S HELPER, ANY DEPARTMENT, ANY BUREAU.

As per Ordinance, March 13, 1912.

(Same questions as for SKILLED LABORER, see page 646.)

WHEELWRIGHT, ANY DEPARTMENT, ANY BUREAU.

As per Ordinance, July 25, 1912.

Experience—Weight 3.

(See page 594.)

Practical Questions—Weight 7.

1. Explain in detail how you would put a new spoke and a new half rim on a wheel? 2. How can you tell

when a tire needs cutting? 3. What kind of wood should be used for: (a) Panels, (b) single tree, (c) sills, (d) posts? 4. (a) How would you prepare a $\frac{3}{8}$ poplar board for a curved panel? (b) How would you prevent it from warping and splitting afterwards? 5. Where is each of the following used: (a) King bolt, (b) rocker plate, (c) shaft coupling, (d) linchpin?

WIREMAN,

DEPARTMENT PUBLIC SAFETY, ELECTRICAL BUREAU.

\$1,000 per annum, March 7, 1912.

(Same questions and weights as ELECTRICIAN, ANY DEPARTMENT. See page 610.)

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